Electronic Supplementary Information (ESI)

General and efficient method for direct $N$-monomethylation of aromatic primary amines with methanol

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4-chloro-N-methylbenzenamine
Proton CDCl3
4-chloro-N-methylbenzenamine
C13CPD  CDCl3
3-chloro-N-methylbenzenamine

Proton CDCl3

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3-chloro-N-methylbenzenamine
C13CPD  CDCl3

| 150.379 | 134.937 | 130.037 | 116.888 | 111.809 | 110.742 | 77.000 | 30.414 |

![Chemical structure of 3-chloro-N-methylbenzenamine](attachment:image.png)
4-bromo-N-methylbenzenamine

Proton CDCl3
4-bromo-N-methylbenzenamine
C\textsubscript{13}CPD  CDC\textsubscript{13}
4-iodo-N-methylbenzenamine
Proton CDCl3

3d
4-iodo-N-methylbenzenamine
C13CPD CDCl3
3,5-difluoro-N-methylbenzenamine
Proton CDCl3
3,5-difluoro-N-methylbenzenamine
C13CPD CDCl3

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N-methyl-4-(methylsulfonyl)benzenamine
Proton  CDCl3
N-methyl-4-(methylsulfonyl)benzenamine
C13CPD  CDC13
N-methyl-4-(trifluoromethoxy)benzenamine
Proton CDCl3
N-methyl-4-(trifluoromethoxy)benzenamine
C13CPD  CDCl3
N,4-dimethylbenzenamine
Proton CDCl3
N,4-dimethylbenzenamine
C13CPD  CDCl3
3-chloro-N,4-dimethylbenzenamine
Proton CDCl3
3-chloro-N,4-dimethylbenzenamine
C13CPD  CDCl3
3-methoxy-N-methylbenzenamine
Proton CDCl3
3-methoxy-N-methylbenzenamine
C13CPD  CDCl3

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N-methylnaphthalen-1-amine
Proton CDCl₃
N-methylnaphthalen-1-amine
C13CPD  CDCl3

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N-methylpyridin-2-amine
Proton CDCl3
N-methylpyridin-2-amine
C13CPD  CDCl3
\[ \text{N,5-dimethylpyridin-2-amine} \]

Proton CDCl3
N,5-dimethylpyridin-2-amine
C13CPD  CDCl3
N-methylpyrazin-2-amine
Proton CDCl3
N-methylpyrazin-2-amine

C13CPD  CDCl3
3-chloro-N-methylbenzenesulfonamide
Proton CDCl3
3-chloro-N-methylbenzenesulfonamide
C13CPD  CDCl3
4-bromo-N-methylbenzenesulfonamide
Proton CDCl3
4-Bromo-N-methylbenzenesulfonamide
C13CPD  CDCl3
N-methyl-4-(trifluoromethyl)benzenesulfonamide
Proton  CDCl3
N-methyl-4-(trifluoromethyl)benzenesulfonamide

C13CPD  CDCl3

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N-methyl-4-(trifluoromethoxy)benzenesulfonamide
Proton  CDCl3
N-methyl-4-[(trifluoromethoxy)benzenesulfonamido]cyclopentadiene (C13CPD) in CDCl3
N,N\text{-}dimethylbenzenesulfonamide
Proton CDCl3
N,2-dimethylbenzenesulfonamide
C13CPD  CDCl3
N,4-dimethylbenzenesulfonamide
Proton CDCl₃
N,4-dimethylbenzenesulfonamide
C13CPD  CDCl3
4-methoxy-N-methylbenzenesulfonamide
Proton  CDCl3
4-methoxy-N-methylbenzenesulfonamide
C13CPD  CDC13
N-methylbenzenesulfonamide
Proton CDCl3

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N-methylbenzenesulfonamide
C13CPD  CDCl3
N-methynaphthalene-2-sulfonamide
Proton CDCl3
**N-methylnaphthalene-2-sulfonamide**

C13CPD  CDCl3

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N-methylbenzo[d]thiazol-2-amine
Proton CDCl3
N-methylbenzo[d]thiazol-2-amine
C13CPD CDCl3

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N,6-dimethylbenzo[d]thiazol-2-amine
Proton CDCl3
N,6-dimethylbenzo[d]thiazol-2-amine
C13CPD CDC13

168.113 150.332 131.012 130.427 127.053 120.884 118.233 122.000 31.628 21.139

7b
N-methyl-6-phenoxybenzo[d]thiazol-2-amine
Proton CDCl3
N-methyl-6-phenoxybenzo[d]thiazol-2-amine
C13CPD CDCl3

168.107  158.282  151.404  148.855  131.280  129.632  122.680  117.937  118.356  119.158  119.158  111.971  77.000  31.642
N-methyl-6-(methylthio)benzo[d]thiazol-2-amine
Proton CDCl₃
N-methyl-6-(methylthio)benzo[d]thiazol-2-amine
C13CPD CDCl3
N-methyl-6-(trifluoromethoxy)benzo[d]thiazol-2-amine
Proton CDCl3
N-methyl-6-(trifluoromethoxy)benzo[d]thiazol-2-amine
C13CPD CDCl3
6-chloro-N-methylbenzo[d]thiazol-2-amine
Proton CDC13
6-chloro-N-methylbenzo[d]thiazol-2-amine
C13CPD CDC13
6-chloro-N,4-dimethylbenzo[d]thiazol-2-amine
Proton CDCl3
6-chloro-N,4-dimethylbenzo[d]thiazol-2-amine
C13CPD CDCl3
N-methyl-4,5-diphenylthiazol-2-amine
Proton CDCl3
N-methyl-4,5-diphenylthiazol-2-amine
C13CPD CDCl3
N,5-dimethyl-4-phenylthiazol-2-amine
Proton CDCl3
N,5-dimethyl-4-phenylthiazol-2-amine
C13CPD CDCl3
5-chloro-N-methylbenzo[d]oxazol-2-amine
Proton CDCl3
5-chloro-N-methylbenzo[d]oxazol-2-amine
C13CPD CDC13
1-benzyl-N-methyl-1H-benzo[d]imidazol-2-amine

Proton CDCl3
1-benzyl-N-methyl-1H-benzo[d]imidazol-2-amine
C13CPD CDCl3
N-methyl-1-phenethyl-1H-benzo[d]imidazol-2-amine
Proton CDCl3
N-methyl-1-phenethyl-1H-benzo[d]imidazol-2-amine
C13CPD  CDCL3

Electronic Supplementary Material (ESI) for RSC Advances
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1-butyl-N-methyl-1H-benzo[d]imidazol-2-amine
Proton CDCl3
1-butyl-N-methyl-1H-benzo[d]imidazol-2-amine
C13CPD  CDCL3