



nitrogen's lone pair makes every amine a base and a nucleophile, but steric bulk and solvation decide how strong

Classification of amines

Aliphatic amine

- N on sp^3 alkyl carbon(s): replaces 1, 2 or 3 H of NH_3
- 1° $R-NH_2$, 2° R_2NH , 3° R_3N : count carbons ON nitrogen
- simple/symmetrical when all groups on N are the same, mixed/unsymmetrical when they differ

Aromatic amine

- N attached directly to the aromatic ring, e.g. aniline $C_6H_5-NH_2$
- same $1/2/3^\circ$ naming, but the N lone pair conjugates into the ring
- delocalisation makes the lone pair less available: ring-attached N is a weaker base

amine classification counts carbons **ON THE NITROGEN**, unlike alcohol/halide classification which counts carbons on the functional carbon: isopropylamine is 1° amine but isopropyl alcohol is 2° alcohol

Common and IUPAC nomenclature *

- common name: alkyl + -amine, ONE word, e.g. ethylamine
- mixed amines: list alkyl groups alphabetically
- identical groups on N take a di-/tri- prefix
- IUPAC 1° : alkane's -e to -amine plus a locant, e.g. propan-1-amine
- IUPAC $2/3^\circ$: named as N-substituted derivatives of the largest chain, e.g. N-methylethanamine
- parent arylamine $C_6H_5-NH_2$ is aniline, an IUPAC-accepted common name
- other arylamines named as aniline derivatives, e.g. 4-methylaniline

