

9.3 Nomenclature

Decoding the IUPAC & Common
Naming Systems for Amines

The Primary Rule: Aliphatic Amines



Alkane  Alkanamine



Methane  Methan + amine  **Methanamine**

Common System: Alkyl group + amine = Alkylamine (e.g., Methylamine).



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$$E=mc^2$$



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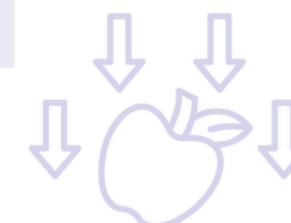
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Primary Amines: IUPAC vs. Common

Amine Formula	Common Name	IUPAC Name
$\text{CH}_3\text{--CH}_2\text{--NH}_2$	Ethylamine	Ethanamine
$\text{CH}_3\text{--CH}_2\text{--CH}_2\text{--NH}_2$	n-Propylamine	Propan-1-amine
$\text{CH}_3\text{--CH}(\text{NH}_2)\text{--CH}_3$	Isopropylamine	Propan-2-amine

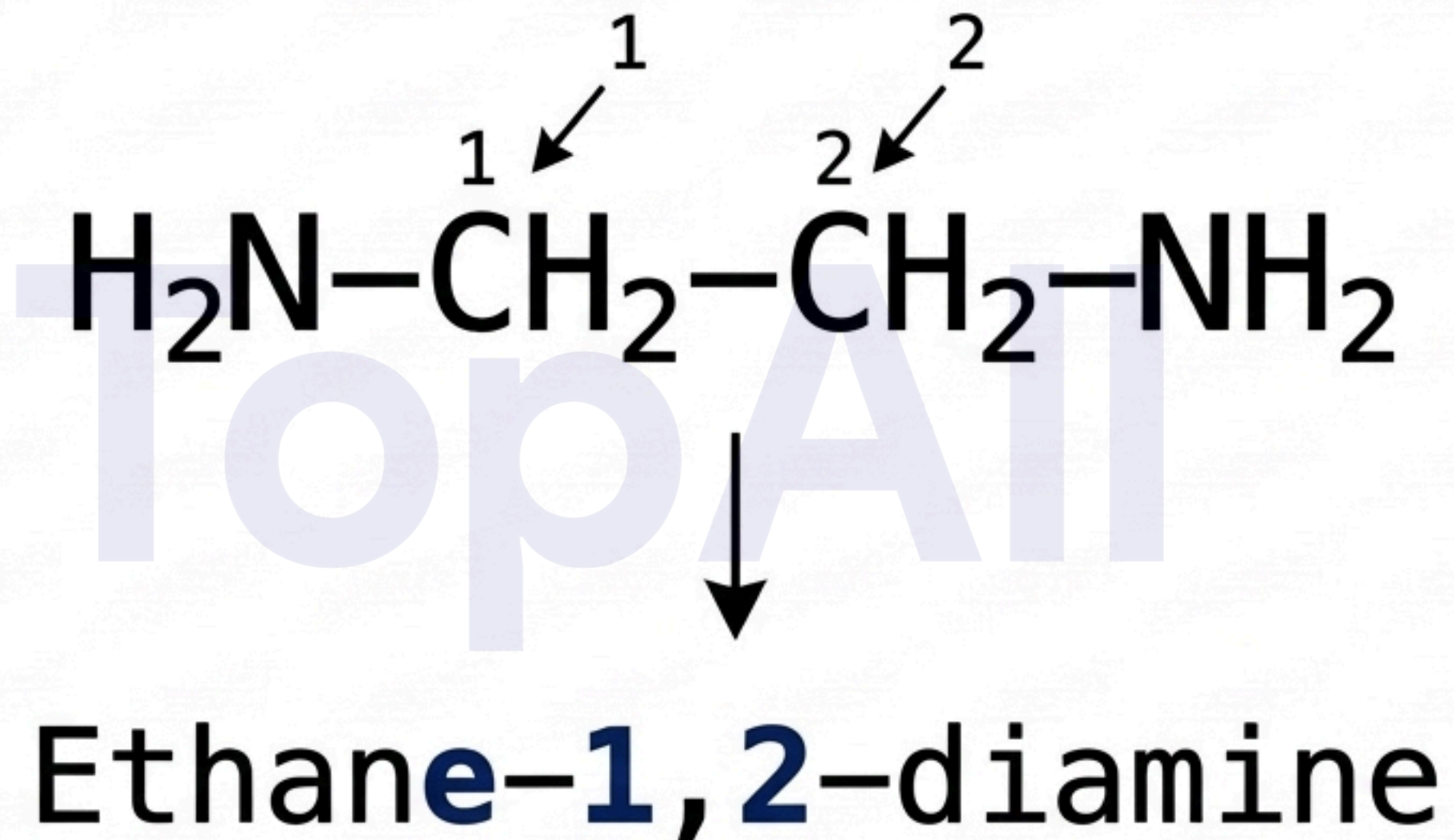
Secondary & Tertiary Amines: The N-Locant

Use 'N' to designate substituents attached **directly** to Nitrogen.

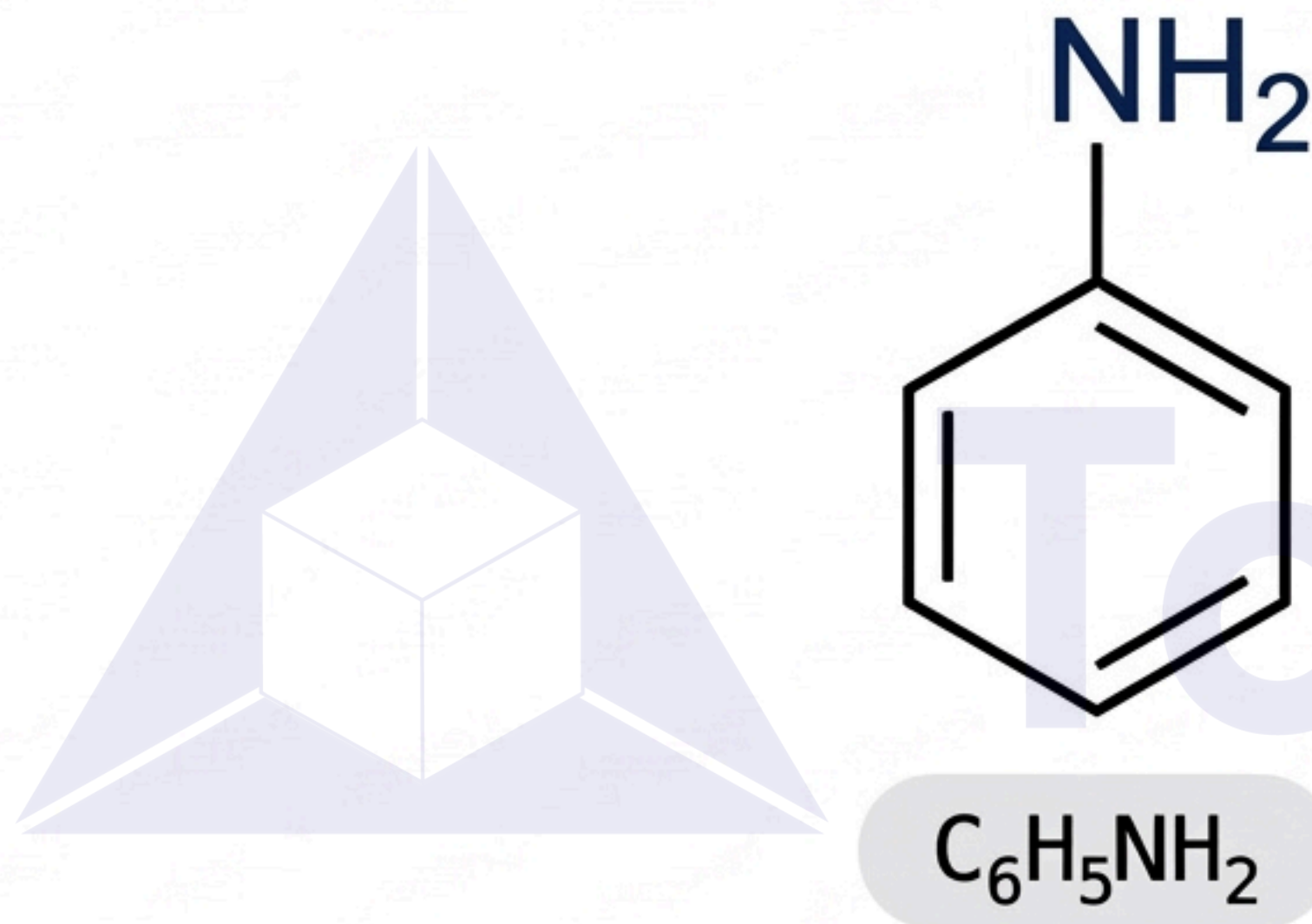
Amine Formula	Common Name	IUPAC Name
$\text{CH}_3\text{-NH-CH}_2\text{CH}_3$	Ethylmethylaniline	N -Methylethanamine
$(\text{CH}_3\text{CH}_2)_3\text{N}$	Triethylamine	N,N -Diethylethanamine

Multiple Amino Groups (Diamines)

Unlike primary mono-amines, **retain the 'e'** of the alkane suffix when adding 'diamine' or 'triamine'.



Arylamines: Aromatic Ring Naming

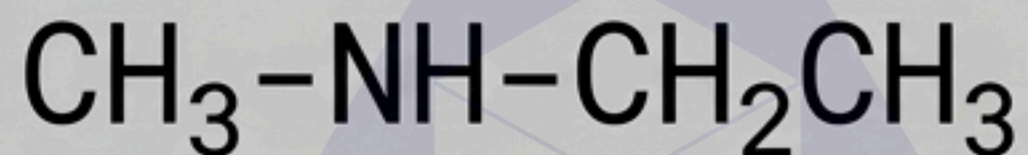


- **Accepted Name: Aniline** (Used in both Common & IUPAC)
- **Strict IUPAC: Benzenamine** (Rule: Replace 'e' of arene with 'amine').

p-Bromoaniline →
4-Bromobenzenamine

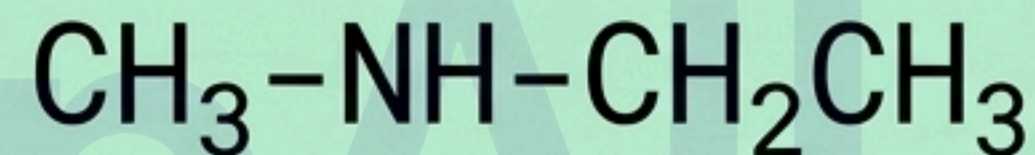
Watch For This Common Pitfall

Naming Substituents on Nitrogen



~~1-Methylethanamine~~

Numbers (1, 2) refer strictly to carbon chain positions, not the nitrogen atom.



N-Methylethanamine

Use the “N-” locant to explicitly state the methyl group is attached to the Nitrogen.

Summary: Nomenclature

1. **Primary Aliphatic:** Alkanamine (Drop 'e', add 'amine').
2. **Secondary/Tertiary:** Use N- locant for substituents on nitrogen (e.g., N-methylethanamine).
3. **Diamines:** Retain the 'e' (e.g., Ethane-1,2-diamine).
4. **Arylamines:** Base is Aniline or Benzenamine.

Try 9.4 Preparation next →



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