

Amines and related compounds

Before you answer the gridlock below fill in the table of amines and related species using:

	trimethylamine	NH_3	CH_3NH_2	quaternary ammonium ion
Type of compound	General formula	Example	Example name	
ammonia		NH_3	ammonia	
primary amine	RNH_2		methylamine	
secondary amine	R_2NH	$\text{CH}_3\text{NHCH}_2\text{CH}_3$	N-methylethylamine	
tertiary amine	R_3N	$(\text{CH}_3)_3\text{N}$		
	R_4N^+	$(\text{CH}_3)_4\text{N}^+$	tetramethylammonium ion	

Gridlock 1

Each row, column and 2 x 2 box contains information about ammonia and the three types of amine. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

type of compound		general formula	
primary amine			NH_3
			tertiary amine
R_2NH			
general formula		type of compound	

gridlocks – can you unlock the grid?

Gridlock 2

Each row, column and 2 x 2 box contains information about the three amines and quaternary ammonium ion.

type of compound		general formula	
primary amine			R_4N^+
	$CH_3NHCH_2CH_3$		trimethylamine
example		example name	

Gridlock 3

Each row, column and 2 x 2 box contains information about the three amines and quaternary ammonium ion.

type of compound		general formula	
primary amine			
		R_3N	
		tetramethylammonium ion	
	$CH_3NHCH_2CH_3$		
example		example name	