

## Inorganic compounds

### ACIDS

#### 1. Hydrogen halides

HF	hydrogen fluoride (hydrofluoric acid)	strong	caustic
HCl	hydrogen chloride (hydrochloric acid)	strong	digestive fluid
HBr	hydrogen bromide (hydrobromic acid)	strong	caustic
HI	hydrogen iodide (hydroiodic acid)	strong	caustic

#### 2. Oxyacids

HClO	hypochlorous acid	weak	oxidant
HClO <sub>2</sub>	chlorous acid	weak	oxidant
HClO <sub>3</sub>	chloric acid	strong	oxidant
HClO <sub>4</sub>	perchloric acid	strong	oxidant/caustic
HNO <sub>2</sub>	Nitrous acid	weak	atmosphere/ozone depletion
HNO <sub>3</sub>	nitric acid	strong	caustic
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid	strong	caustic
H <sub>2</sub> SO <sub>3</sub>	sulphorous acid	strong	caustic
H <sub>3</sub> PO <sub>4</sub>	phosphoric acid	weak	buffer in blood
H <sub>3</sub> BO <sub>3</sub>	boric acid	weak	antiseptic
H <sub>2</sub> CO <sub>3</sub>	carbonic acid	weak	buffer in blood
HMnO <sub>4</sub>	Permanganic acid		oxidizing salts
HCN	hydrogen cyanide (cyanidric acid)	weak	poison

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### **BASES (hydroxides)**

NaOH	sodium hydroxide	strong	caustic
KOH	potassium hydroxide	strong	caustic
Ca(OH) <sub>2</sub>	calcium hydroxide	strong	caustic
Mg(OH) <sub>2</sub>	magnesium (di)hydroxide	strong	caustic
Al(OH) <sub>3</sub>	aluminum (tri)hydroxide	strong	caustic
NH <sub>3</sub> .H <sub>2</sub> O	ammonia	weak	surface cleaning
NH <sub>4</sub> OH	ammonium hydroxide		

### **OXIDES**

CO	carbon monoxide	lethal gas
Na <sub>2</sub> O	(di)sodium oxide	yields hydroxide in water
K <sub>2</sub> O	(di)sodium oxide	yields hydroxide in water
CaO	calcium oxide	yields hydroxide in water
MgO	magnesium oxide	yields hydroxide in water
Al <sub>2</sub> O <sub>3</sub>	(di)aluminum (tri)oxide	yields hydroxide in water

**OXIDES (anhydrides that in water yield oxyacids)**

CO <sub>2</sub>	carbon dioxide	present in air, cell resp. product
NO	nitrogen oxide	messenger, vasodilation, toxic
NO <sub>2</sub>	nitrogen dioxide	$2 \text{NO}_2 + \text{H}_2\text{O} \rightarrow \text{HNO}_2 + \text{HNO}_3$
SO <sub>2</sub>	sulfur dioxide	Exhaustion gas (+ H <sub>2</sub> O acid rain) $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3$
SO <sub>3</sub>	sulfur trioxide	$\text{SO}_3 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_4$

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### SALT

#### *Non-hydrolizing salts (neutral)*

NaCl	sodium chloride	body fluids, cells
KCl	potassium chloride	ubiquitario
KBr	potassium bromide	sedative
KI	potassium iodide	supply for tyroid
CaCl <sub>2</sub>	calcium chloride	ion supply
MgSO <sub>4</sub>	magnesium sulfate	low solubility/ laxative
KNO <sub>3</sub>	potassium nitrate	fertilizer/agriculture
NaNO <sub>3</sub>	sodium nitrate	fertilizer/agriculture
CuSO <sub>4</sub>	copper sulfate	antimicrobial/agriculture
AgNO <sub>3</sub>	silver nitrate	local antiseptic
KMnO <sub>4</sub>	potassium permanganate	antiseptic/oxidizing
HgCl <sub>2</sub>	mercury choride	toxic
BaSO <sub>4</sub>	barium sulfate	low solubility/ x-ray diagnistics

#### *SALT (Acidic hydrolysis)*

NH <sub>4</sub> Cl	ammonium chloride	urine
CH <sub>3</sub> COO(NH <sub>4</sub> )	ammonium acetate	lab reagent
(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	ammonium sulphate	lab reagent

## SALT

*(basic hydrolysis)*

$\text{CH}_3\text{COONa}$	sodium acetate	in buffers
$\text{CH}_3\text{COOK}$	potassium acetate	in buffers
$\text{CaCO}_3$	calcium carbonate	antacid
$\text{Ca}_3(\text{PO}_4)_2$	calcium phosphate	bone matrix
$\text{Na}_3\text{PO}_4$	sodium phosphate	industry
$\text{Na}_2\text{HPO}_4$	disodium hydrogen phosphate	buffer in plasma
$\text{NaH}_2\text{PO}_4$	mono-sodium hydrogen phosphate	"
$\text{NaHCO}_3$	sodium hydrogencarbonate	<i>(bicarbonate) blood</i>