

OXY-ACIDS

"ic" acid

when central atom is usually in its highest oxidation state.

"us" acid or "ous" acid :-

Central atom has oxidation state lower than that of
"ic" acid by two units.

"ic" acids

+6



Sulphuric acid



Nitric acid

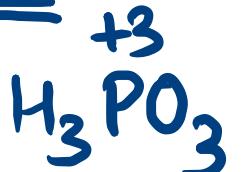


Silicic acid

"us" acids

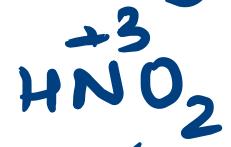
"us" acids

+3



Phosphorus acid

+3



Nitrous acid

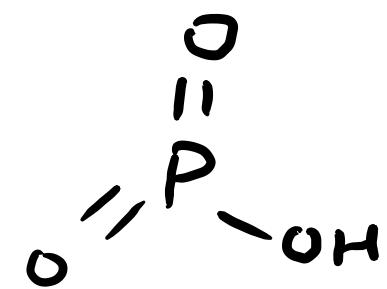
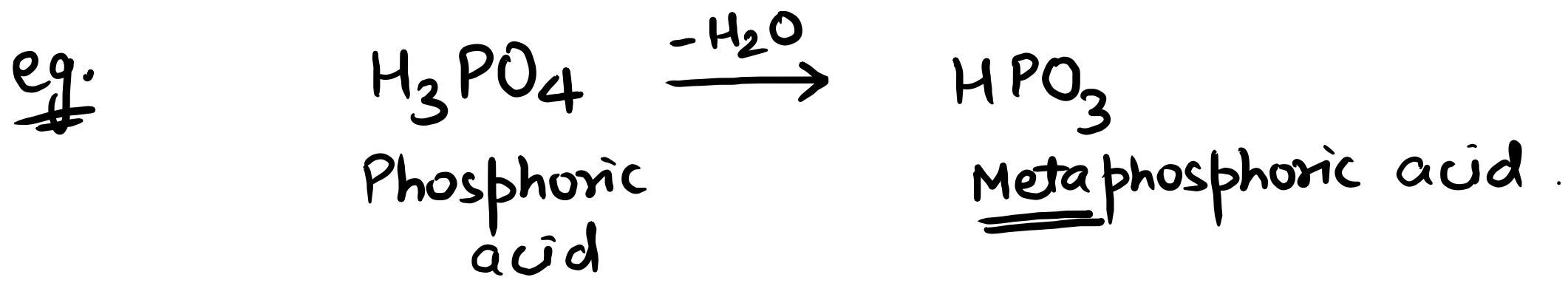
+4



Sulphurous acid

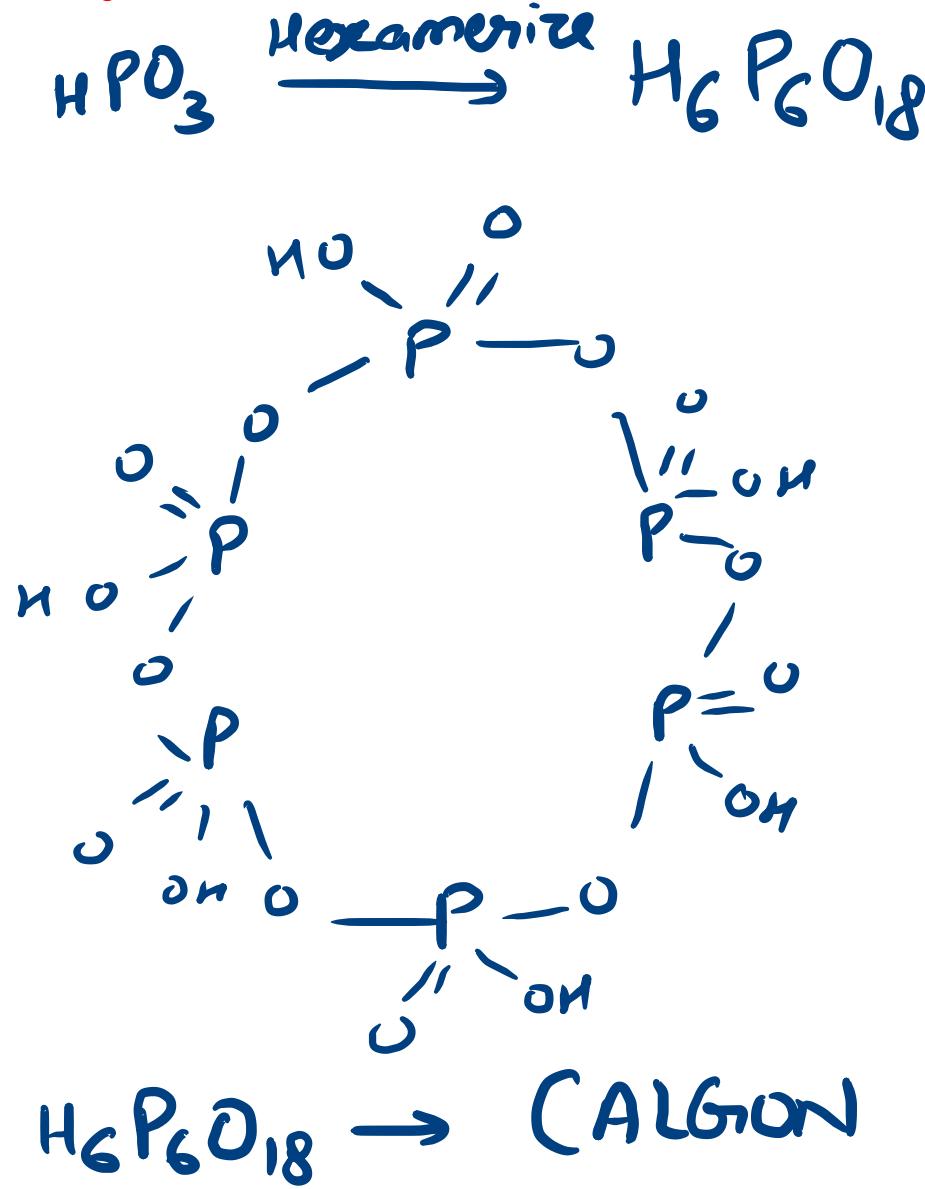
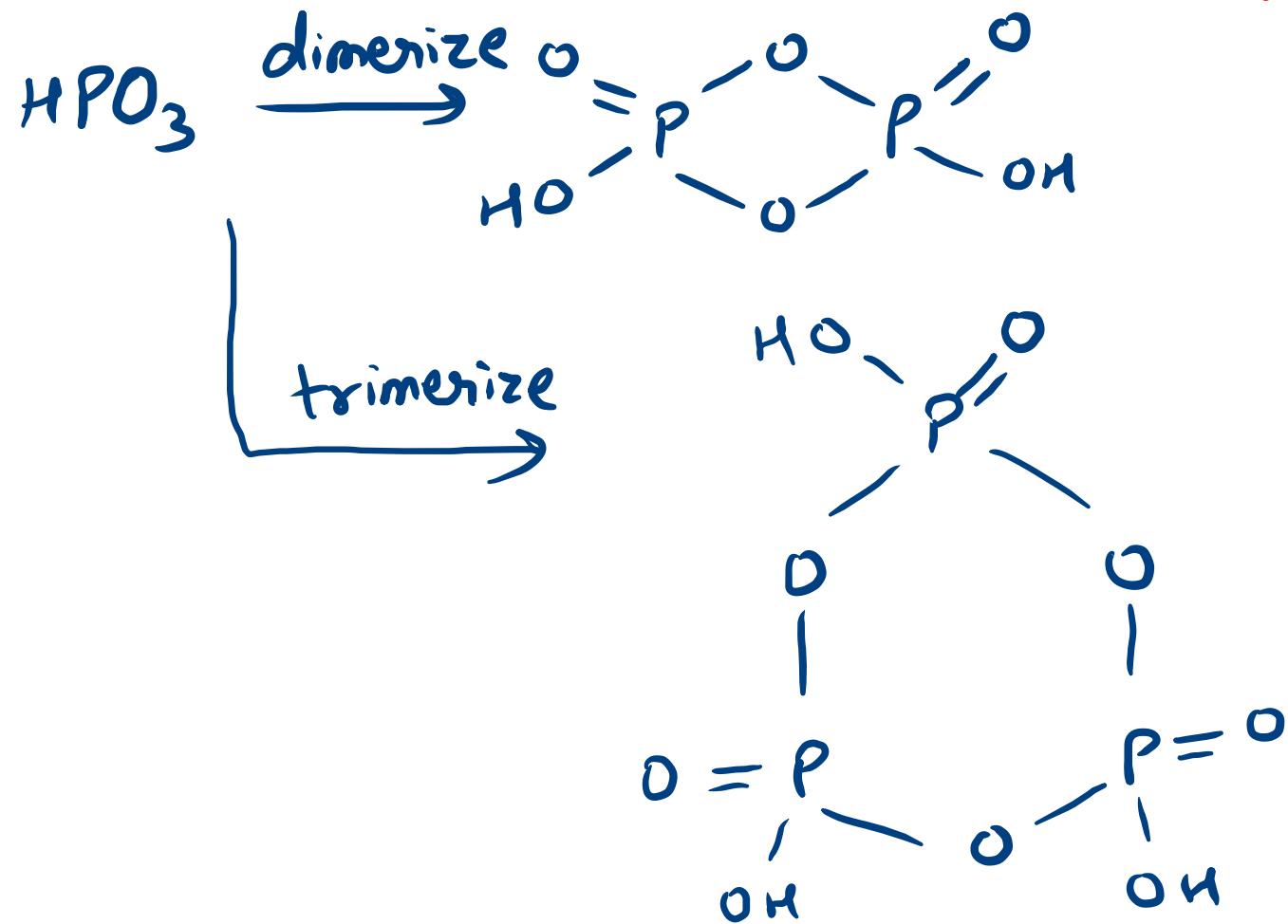
① "META" Prefix :-

usually "ic" acid $\xrightarrow{-H_2O}$ Resulting oxy acid
(one molecule) $\quad \quad \quad$ (Meta acid)

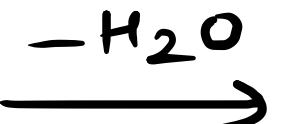


**** MONOMER** or single molecule of META
acid does not exist at room temperature .

**** All META acids exist in cyclic Polymeric form .**



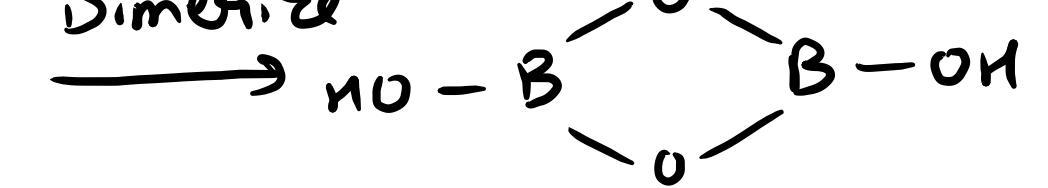
Boric acid



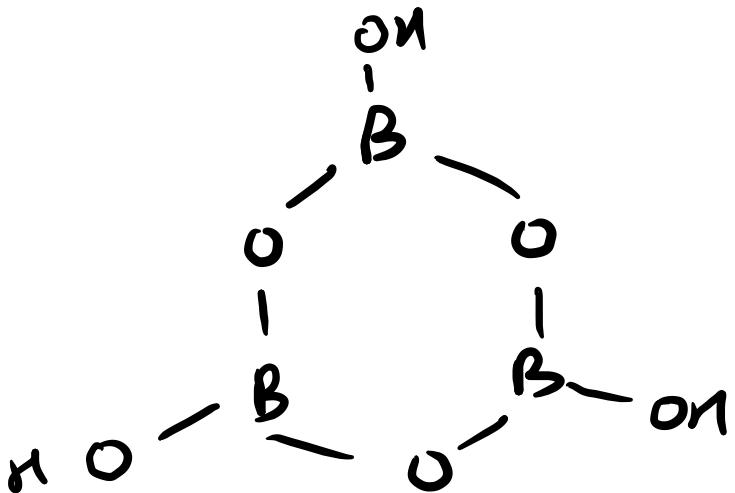
Meta Boric acid.



Dimerize



trimerize



cyclic trimetaboric acid.



sulphuric
acid



not an
oxy acid.

** All oxy acids from which a META acid can be derived are also called ORTHO acids

orthophosphoric ✓

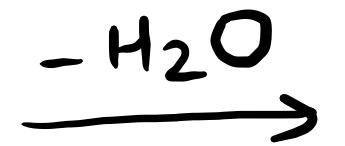
orthoboric ✓

orthosulphuric ✗

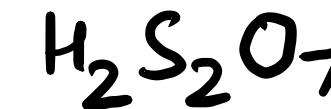
orthonitric ✗

② PYRO Prefix :-

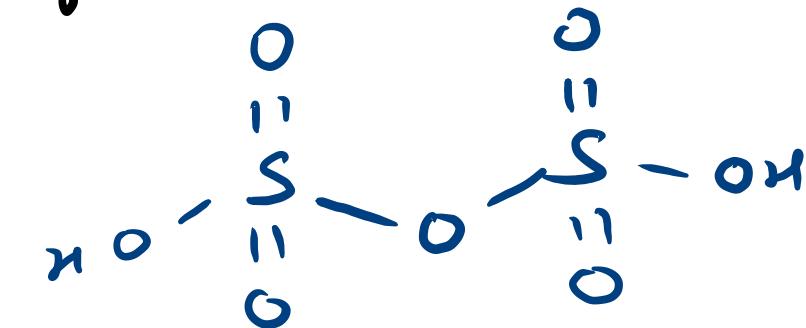
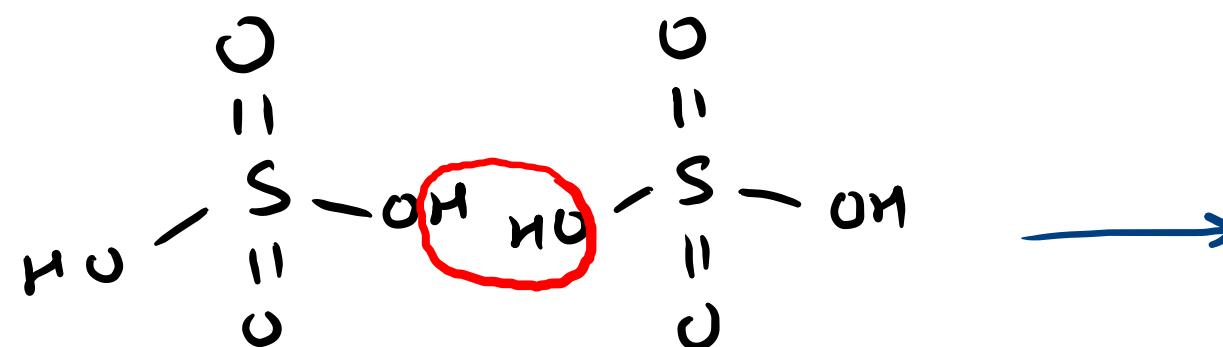
2 molecule
usually ("ic" acid)



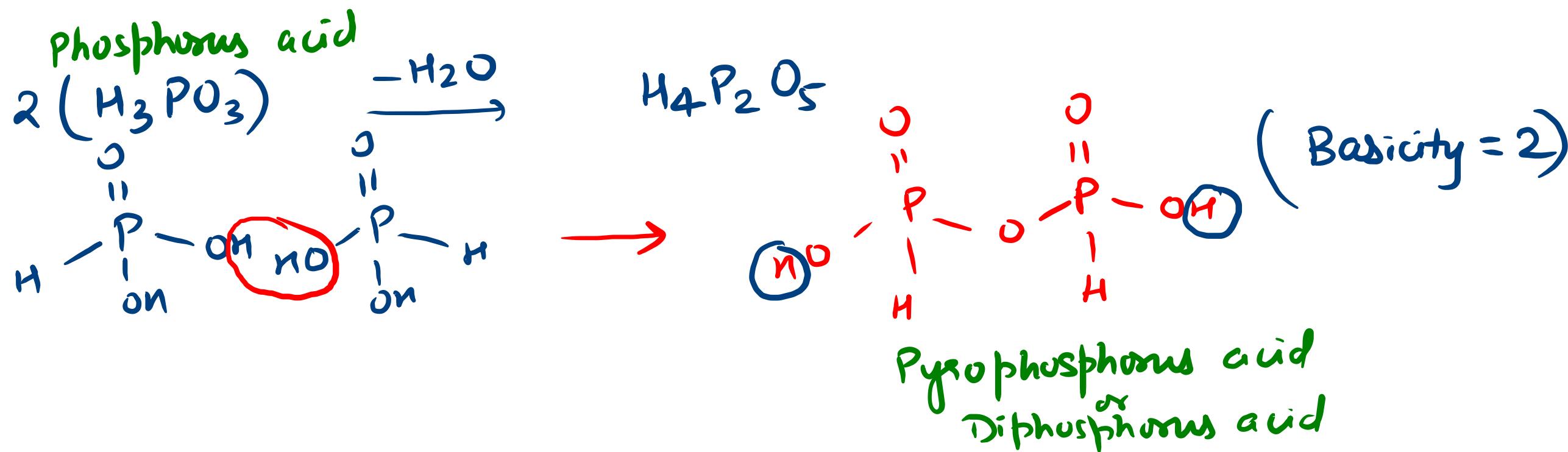
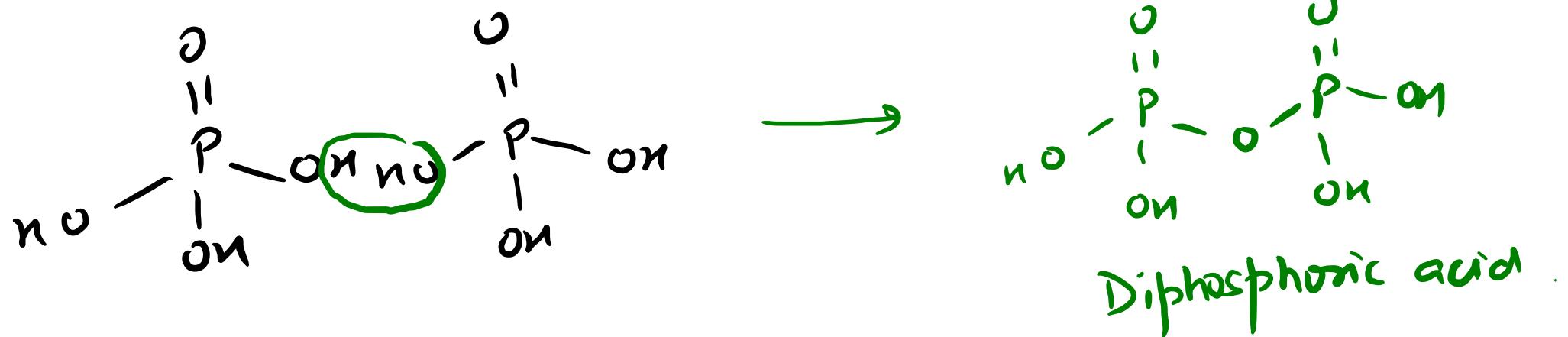
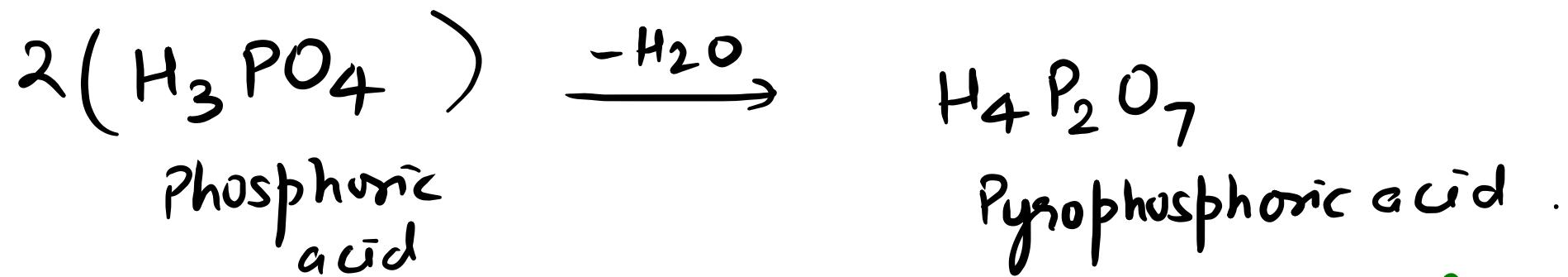
Resulting oxy acid
(Pyro prefix
or
Pyro acid).



Pyrosulphuric acid.



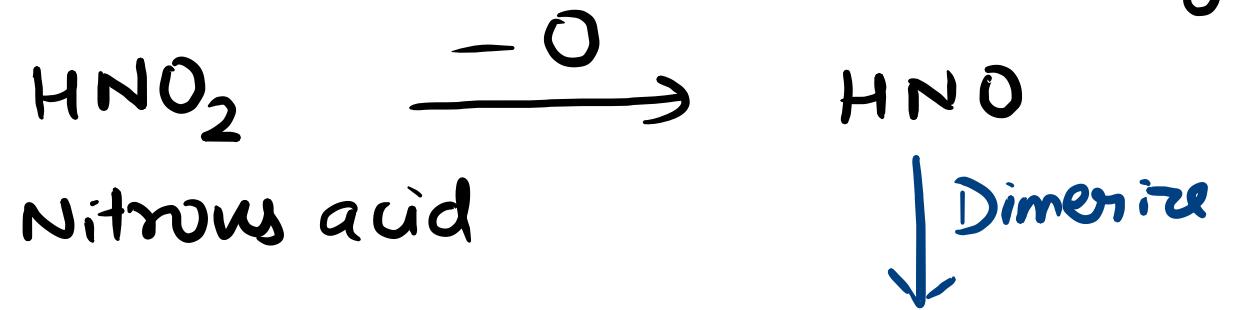
Disulphuric acid
or
Pyrosulphuric acid.



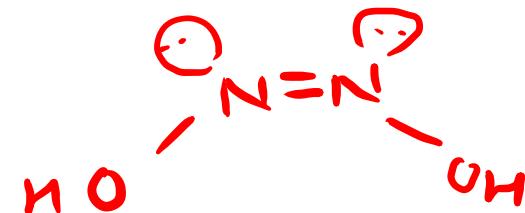
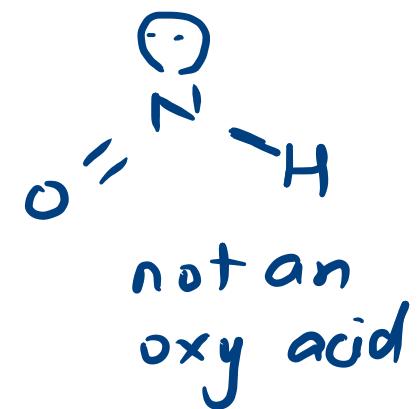
(3)

HYPO Prefix :-

usually "us" acid $\xrightarrow{-O}$ Resulting oxy acid
 (one molecule) (Hypo acid)

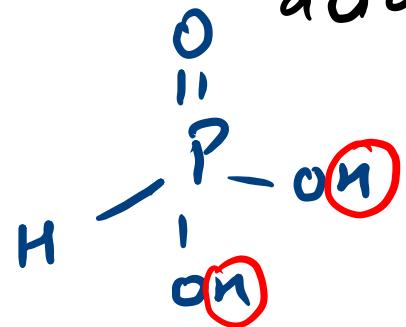


$\text{H}_2\text{N}_2\text{O}_2$
 Hyponitrous acid.



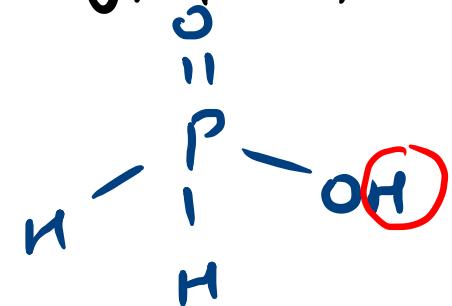


Phosphorous
acid



Basicity = 2

Hypophosphorous acid



Basicity = 1

** If Hypo is used before an "ic" acid, then it must be derived from its pyro form.

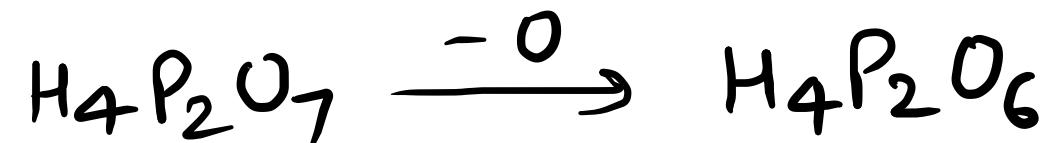
Hypo sulphuric acid



Pyrosulphuric

Hyposulphuric acid or Hypodisulphuric

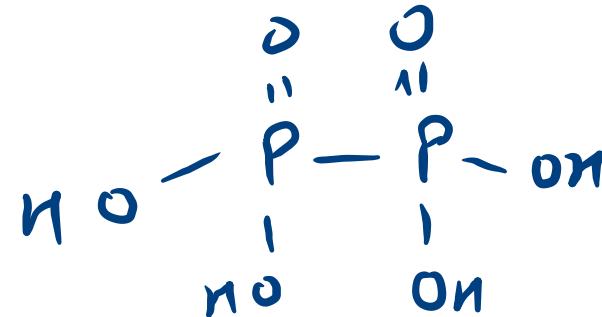
Hypophosphoric



Pyrrophosphoric

Hypophosphoric

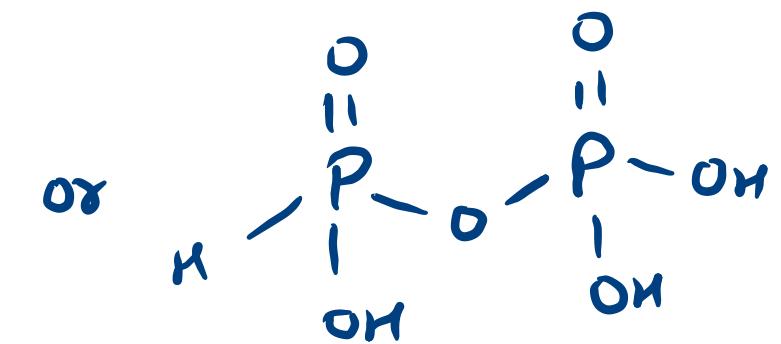
or
Hypodiphosphoric



Hypophosphoric

Basicity = 4

↑ more stable at room temp.



Isohypophosphoric

Basicity = 3

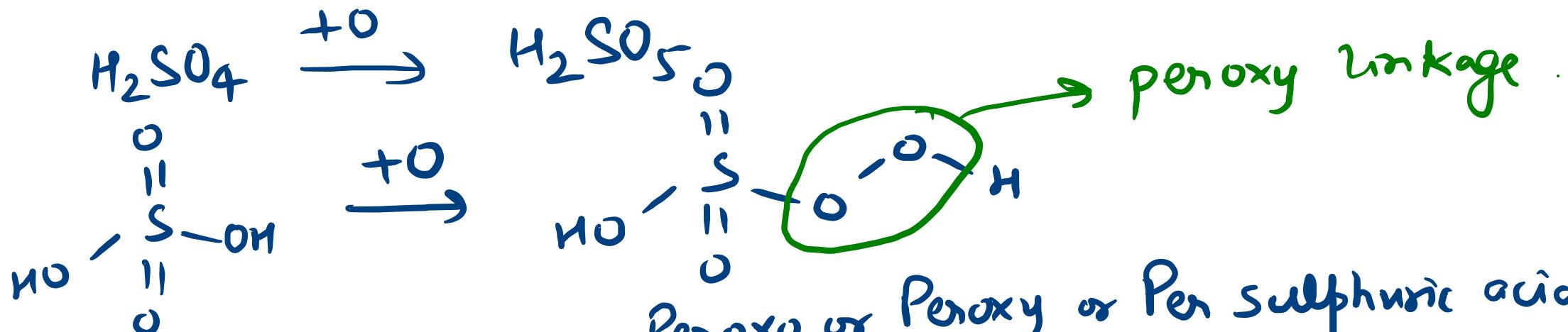
④ PEROXO
or
PEROXY
or
PER

Prefix :-

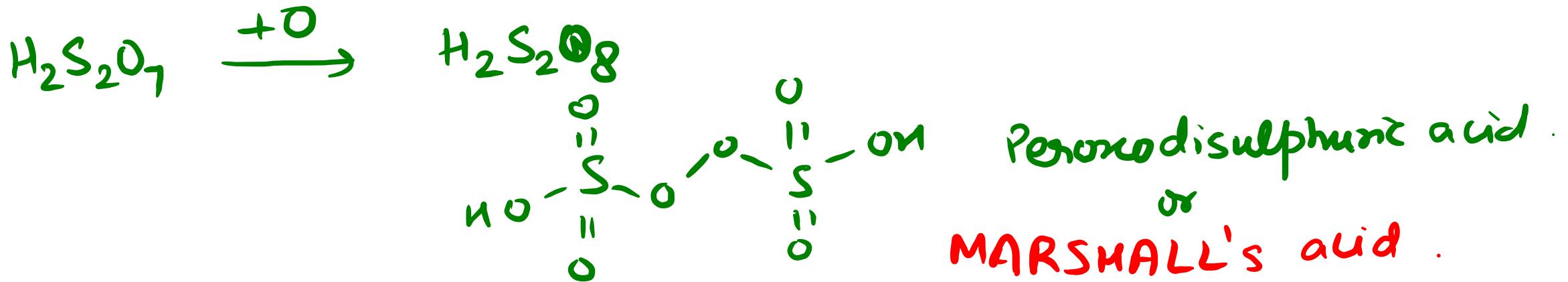
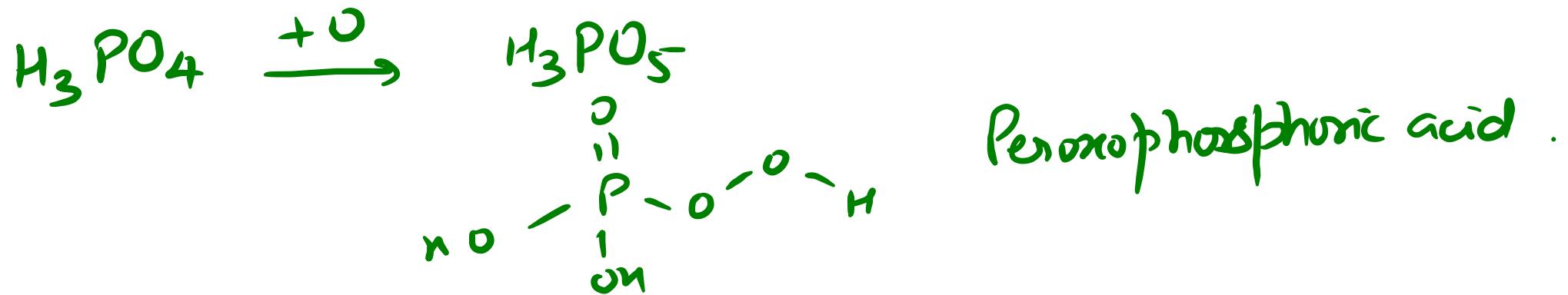
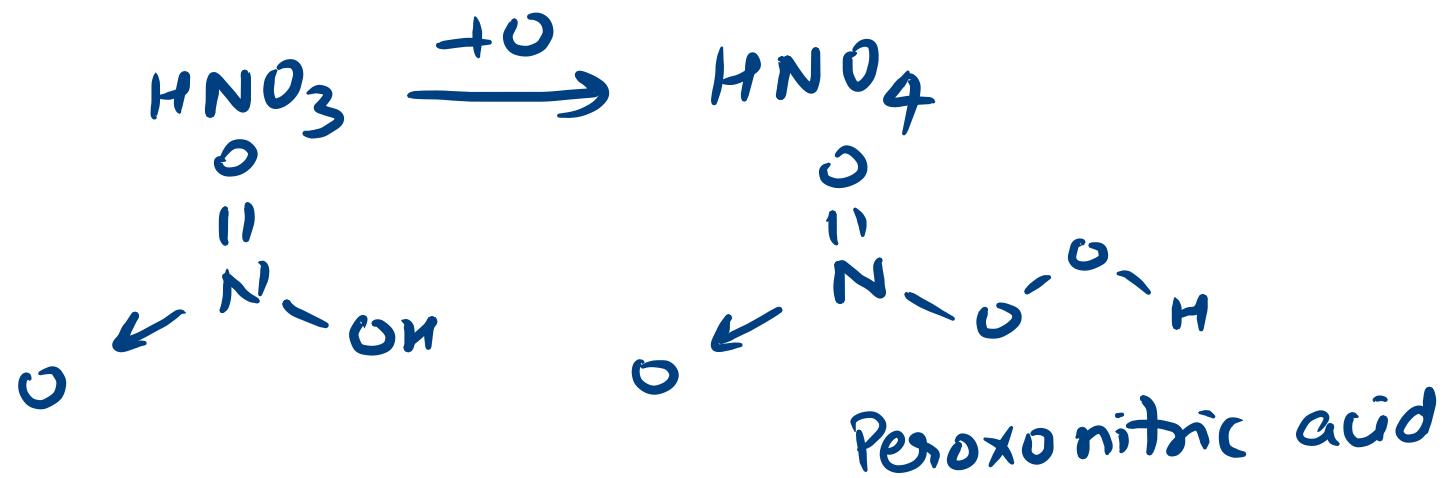
"ic" acid $\xrightarrow{+O}$

(one molecule)

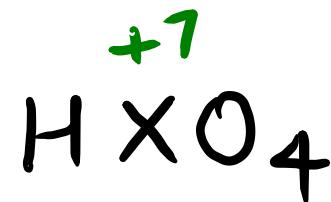
Resulting oxy acid
Peroxy or Peroxo or Per acid .



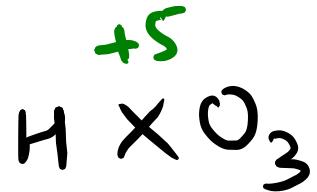
Peroxo or Peroxy or Per sulphuric acid
(CARO's Acid)



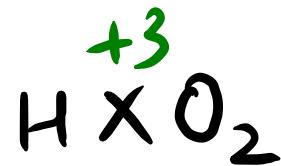
HALOGEN OXY ACIDS:-



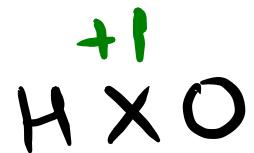
Per "ic" acid.



"ic" acid



"us" acid



Hypo "us" acid

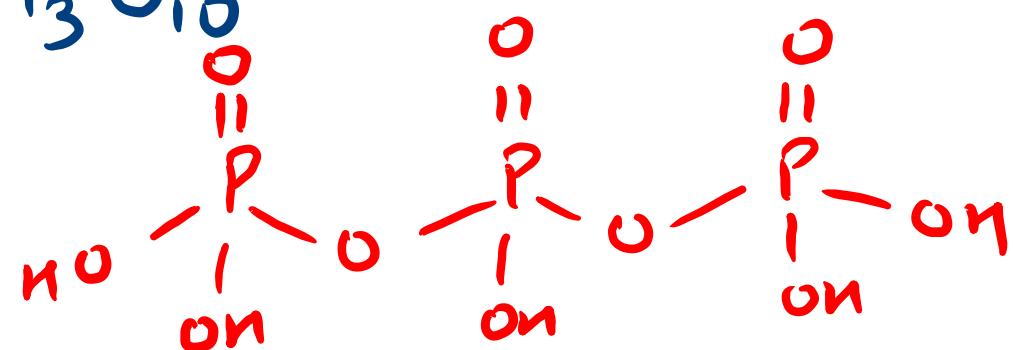


Polyphosphoric acid :-

$H_{n+2} P_n O_{3n+1}$ → General form.

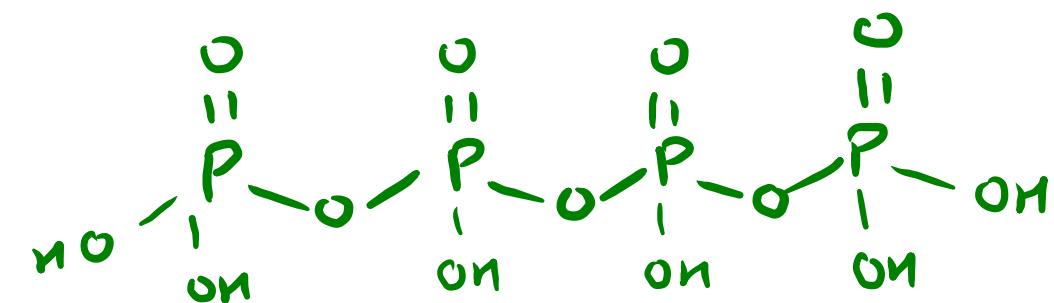
$$n \geq 3$$

$$\underline{\underline{n=3}}$$



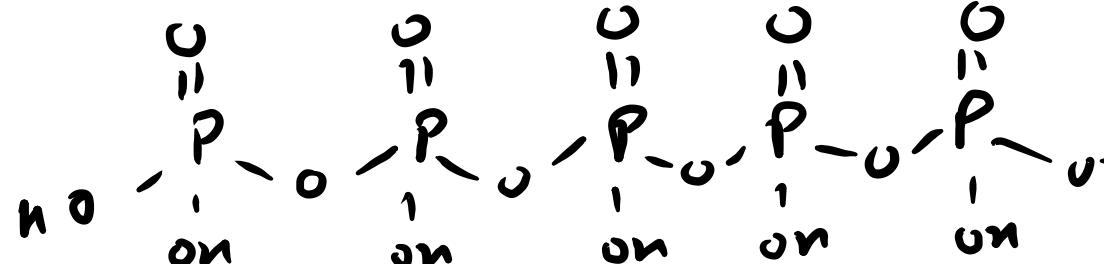
tripolyphosphoric acid

$$\underline{\underline{n=4}}$$



tetrapolyphosphoric acid

$$n=5$$



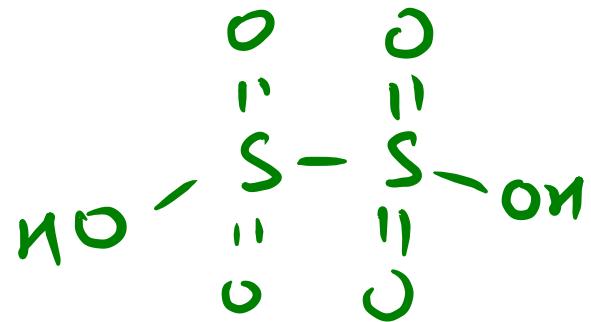
penta polyphosphoric acid.

THIONIC ACIDS :-



$n \geq 2$

$n=2$

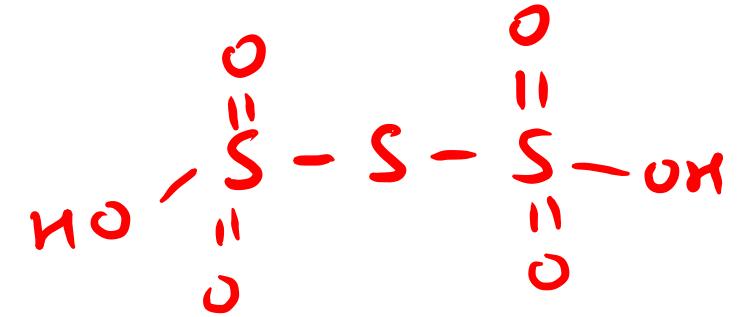


Dithionic acid

or

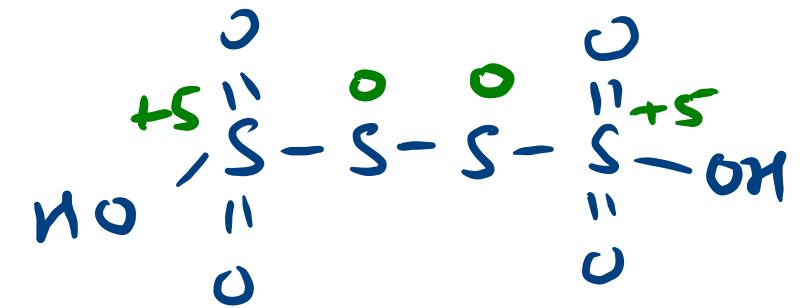
Mysosulphuric acid.

$n=3$



Trithionic acid

$n=4$



Tetrathionic acid.

THIO ACIDS :-

Oxy acid $\xrightarrow[-O]{+S}$ Resulting oxy acid
Thio acid.

