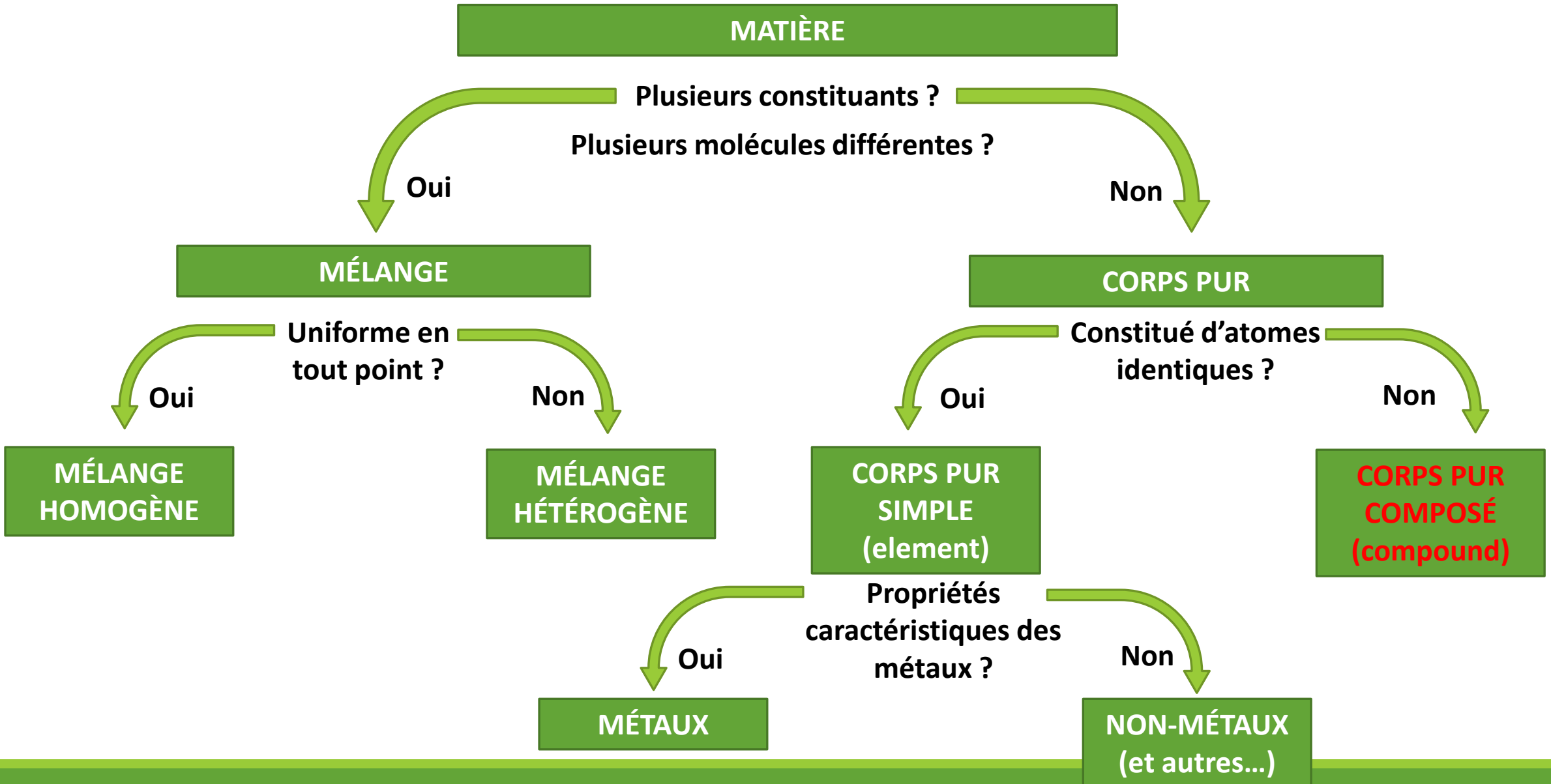


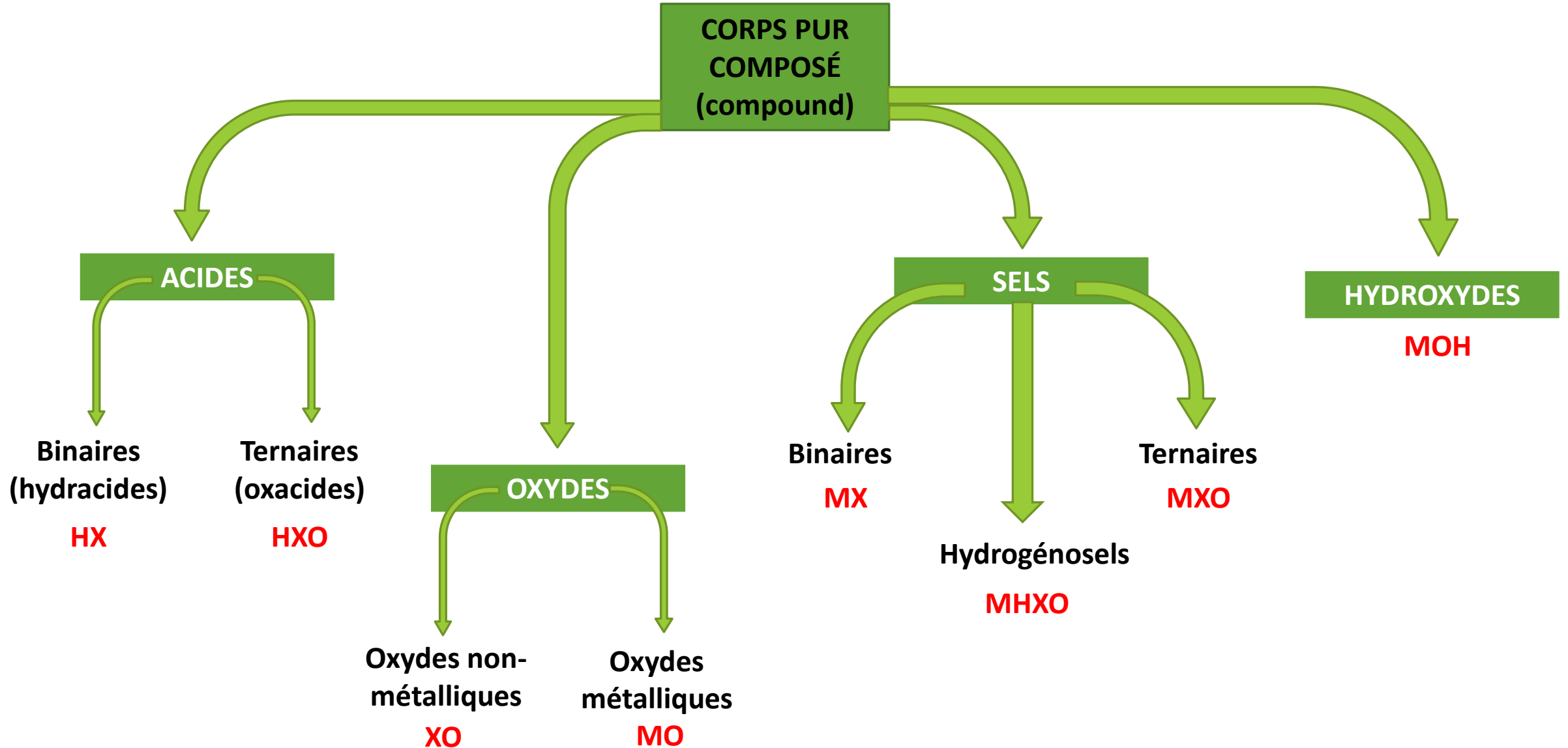
Cours préparatoires

Types de réactions chimiques

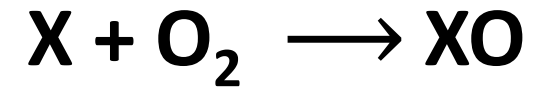
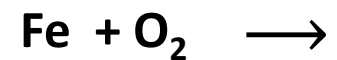
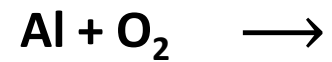
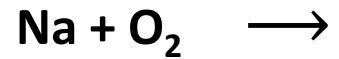
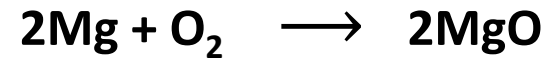
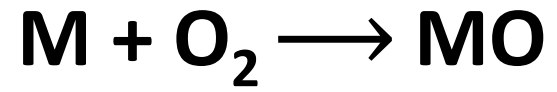
1. Fonctions chimiques principales



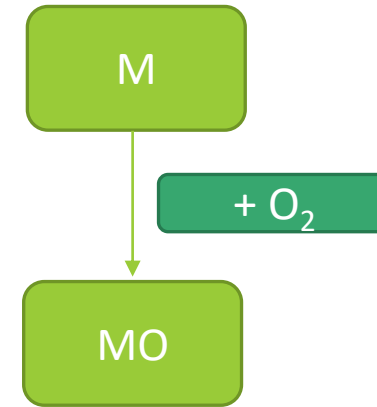
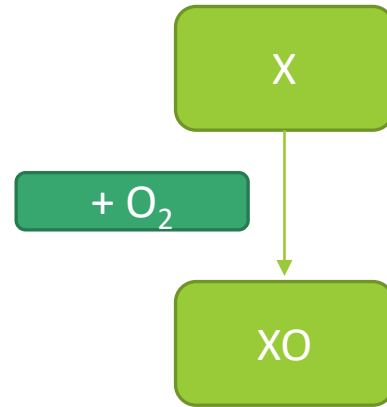
1. Fonctions chimiques principales



2. Réactions de combustion / oxydation

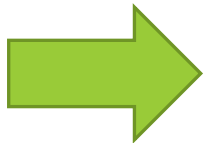
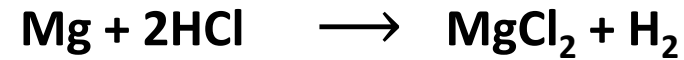
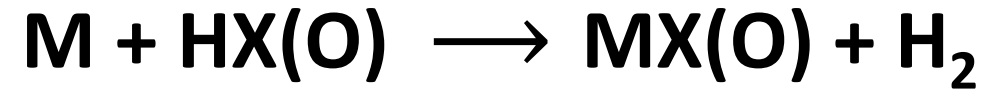


2. Réactions de combustion / oxydation



3. Réaction entre un acide et un métal

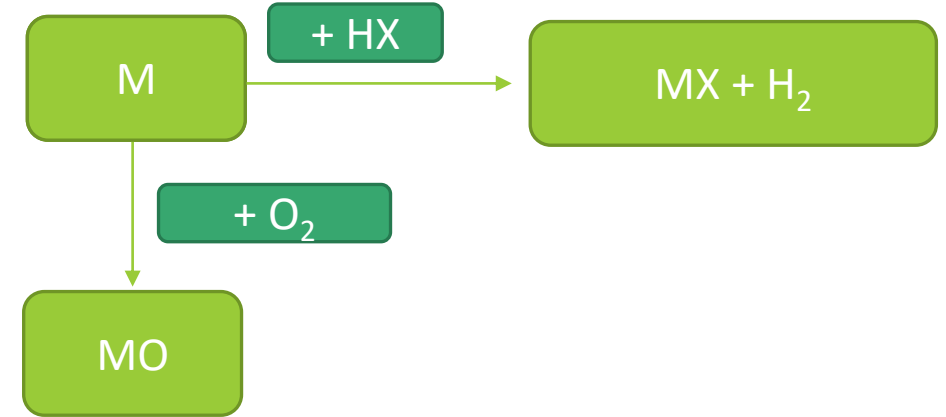
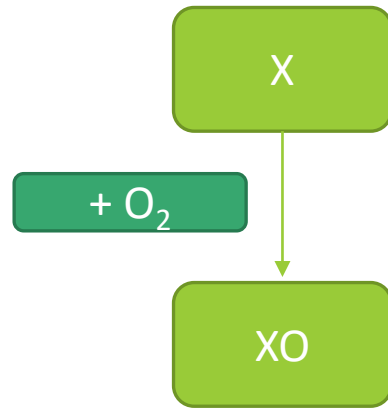
<https://www.youtube.com/watch?v=UxChgvLAzpE>



**Première définition d'un
acide (Liebig)**

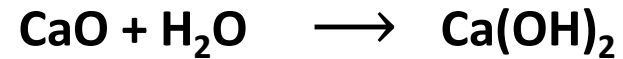
« Substance dont les atomes d'hydrogène
sont déplaçables par un métal »

3. Réaction entre un acide et un métal



4. Réactions d'hydratation

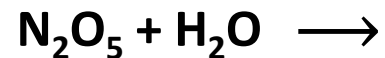
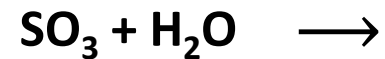
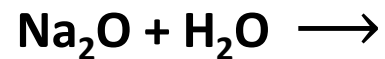
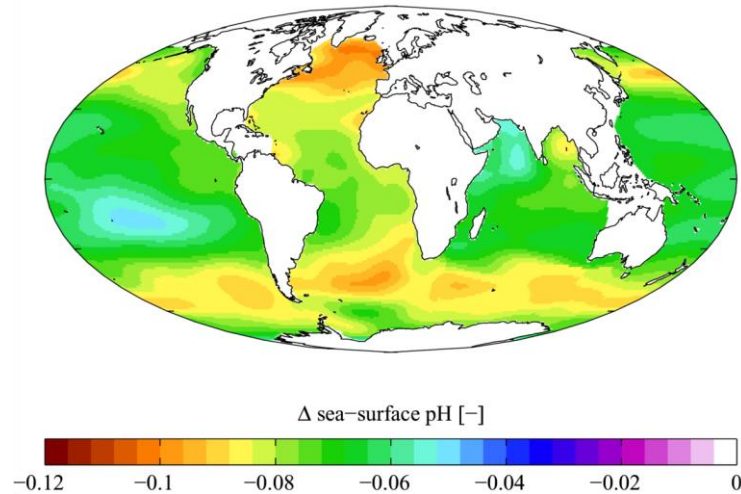
4.1. Hydratation des oxydes métalliques



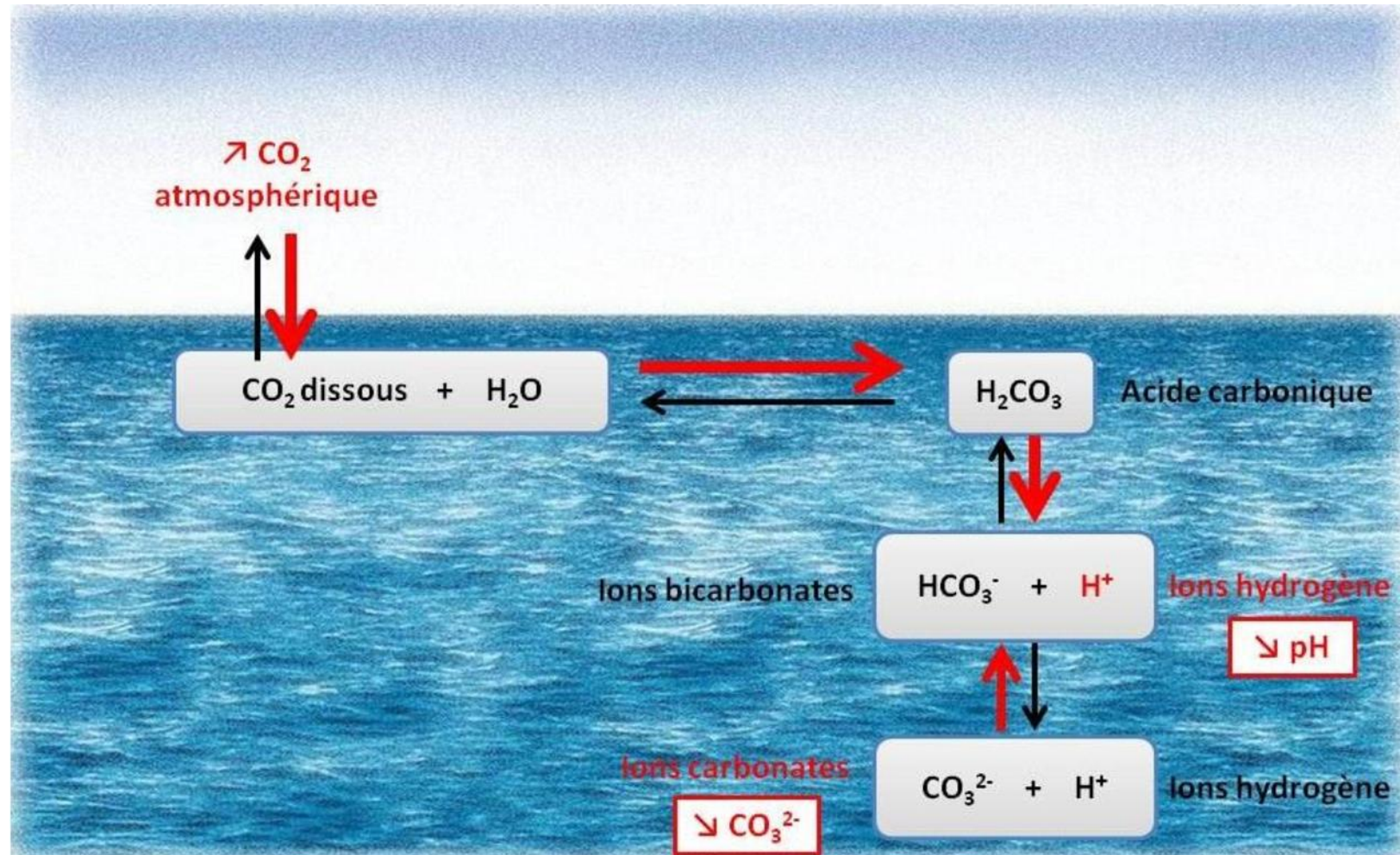
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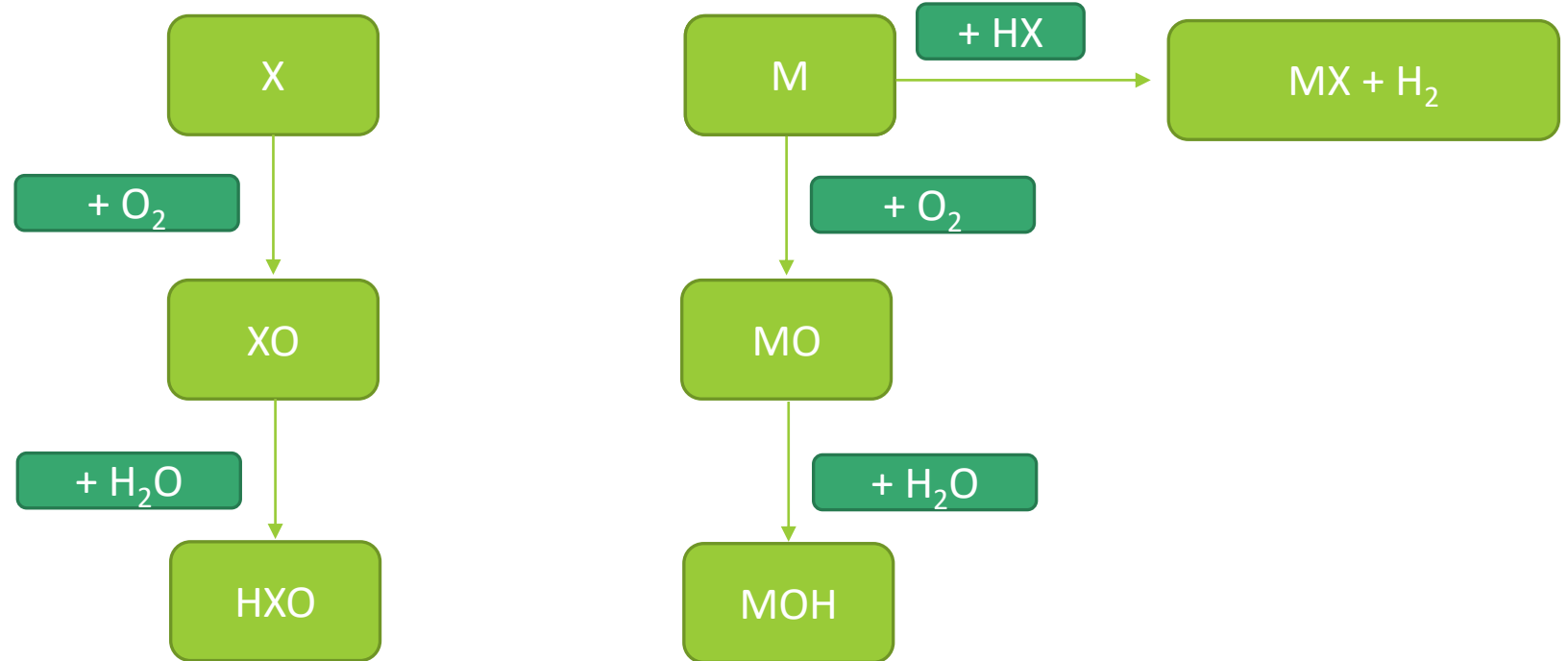
4.2. Hydratation des oxydes non-métalliques



4. Réactions d'hydratation

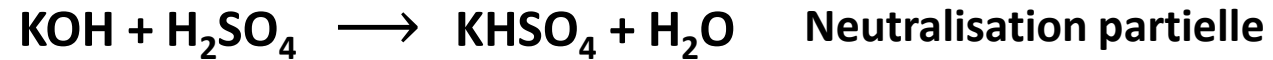
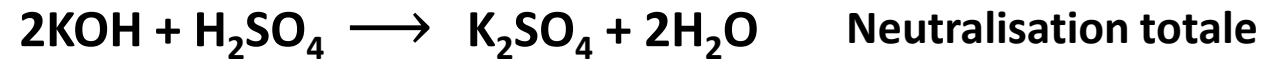
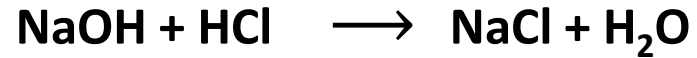


4. Réactions d'hydratation



5. Réactions de neutralisation

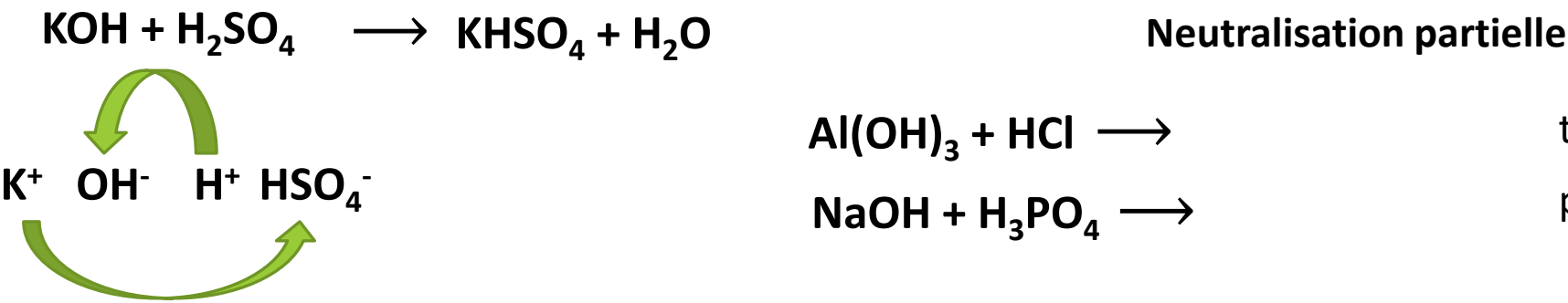
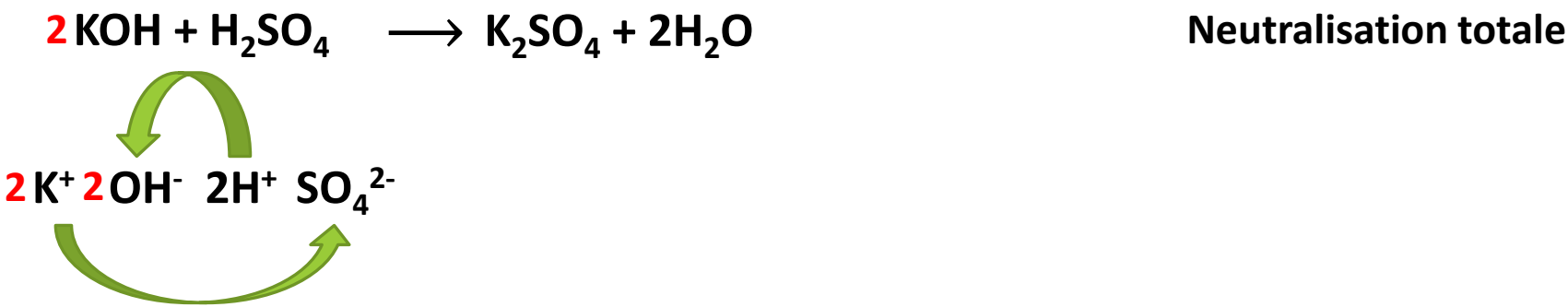
5.1. Réaction de neutralisation entre un acide et un hydroxyde



5. Réactions de neutralisation

5.1. Réaction de neutralisation entre un acide et un hydroxyde

Méthode de pondération



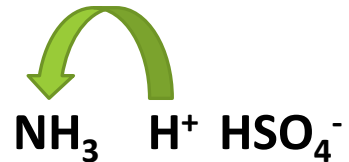
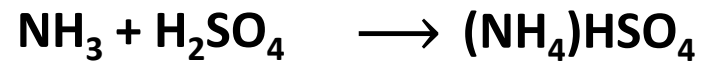
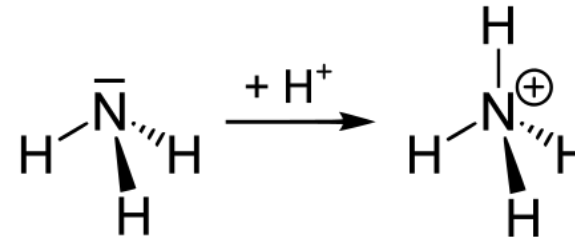
5. Réactions de neutralisation

5.2. Réaction de neutralisation entre un acide et une base aminée

Méthode de pondération



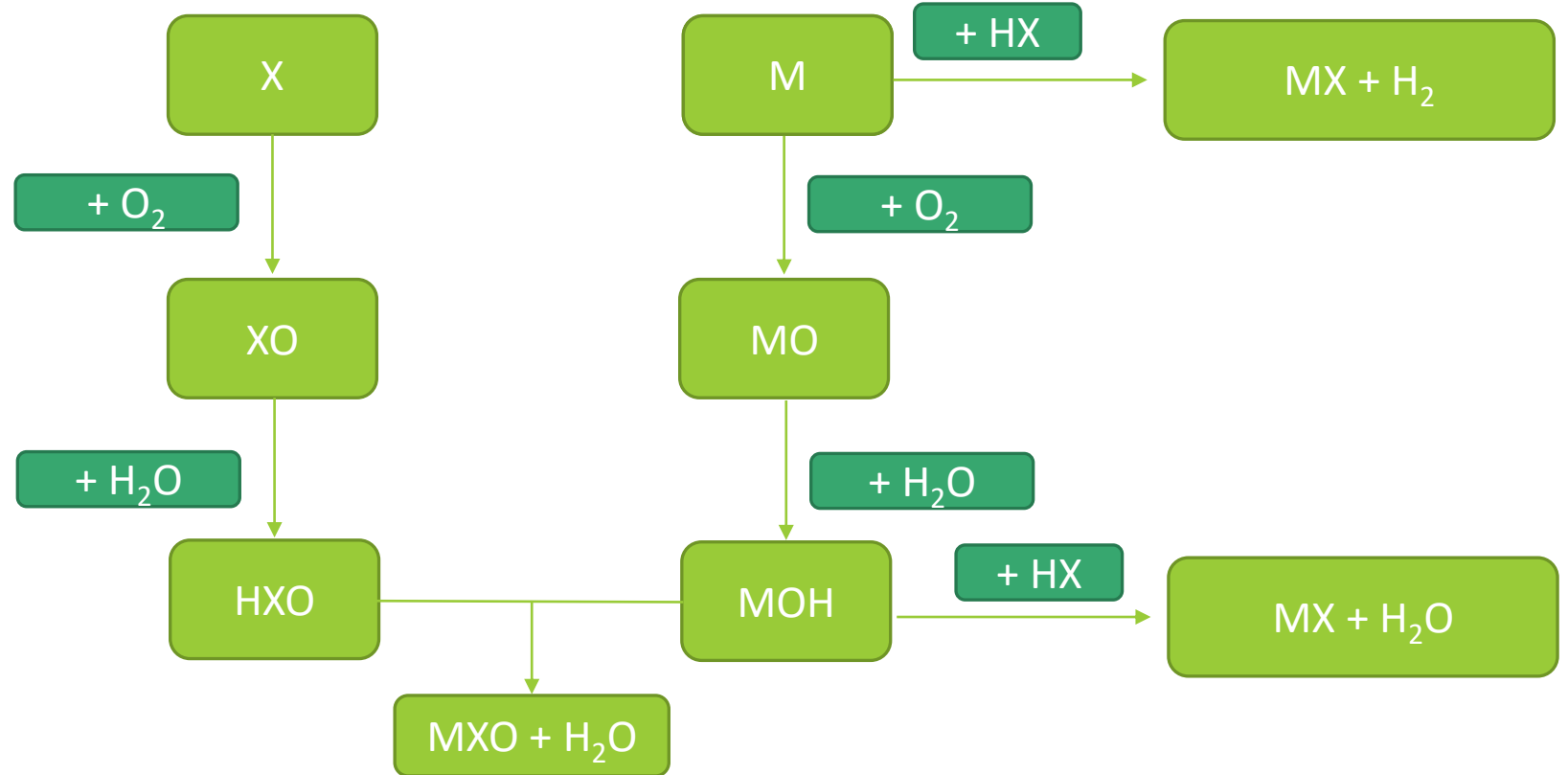
Neutralisation totale



Neutralisation partielle

VALABLE POUR TOUTES LES BASES AMINÉES !

5. Réactions de neutralisation

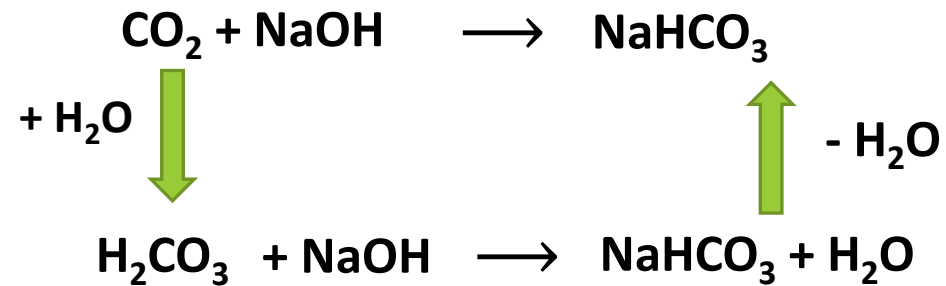


5. Réactions de neutralisation

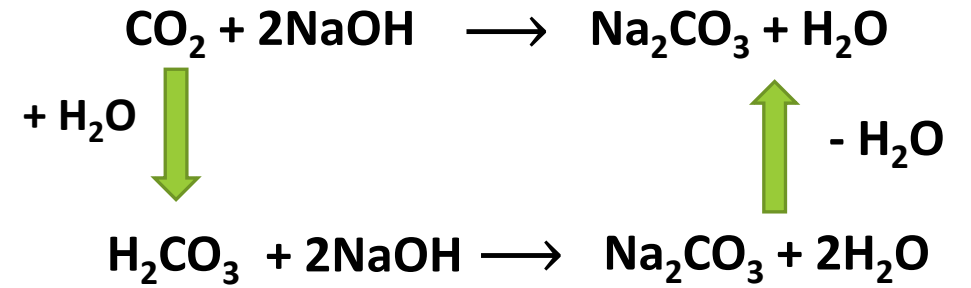
5.3. Réaction de neutralisation entre un oxyde acide et un hydroxyde

Méthode de pondération

Neutralisation partielle



Neutralisation totale



- 1 HYDRATATION DE L'OXYDE
- 2 REACTION ENTRE L'ACIDE ET LA BASE
- 3 SUPPRESSION DE L'EAU UTILISÉE DANS L'ÉTAPE 1

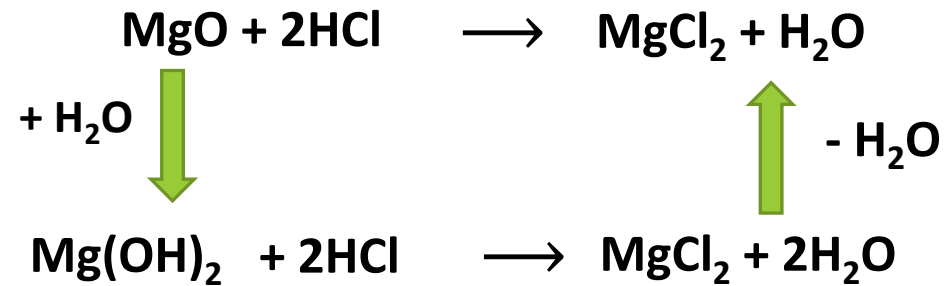


5. Réactions de neutralisation

5.4. Réaction de neutralisation entre un oxyde basique et un acide

Méthode de pondération

Neutralisation totale



1

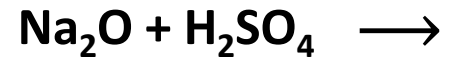
HYDRATATION DE L'OXYDE

2

REACTION ENTRE L'ACIDE ET LA BASE

3

SUPPRESSION DE L'EAU UTILISÉE DANS L'ÉTAPE 1

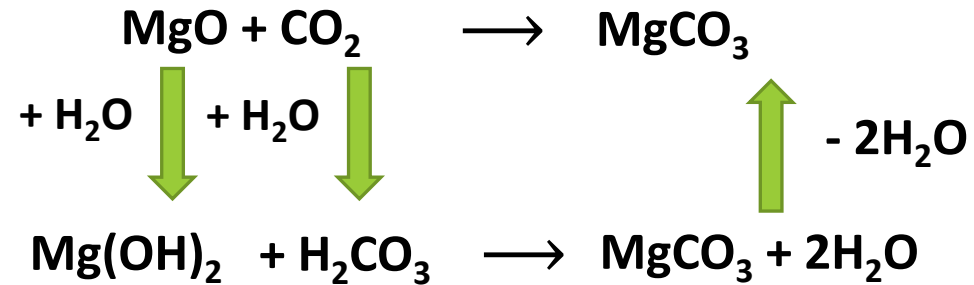


5. Réactions de neutralisation

5.5. Réaction de neutralisation entre un oxyde basique et un oxyde acide

Méthode de pondération

Neutralisation totale



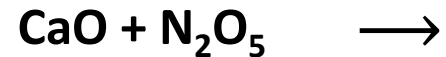
1

HYDRATATION DES DEUX OXYDES



2

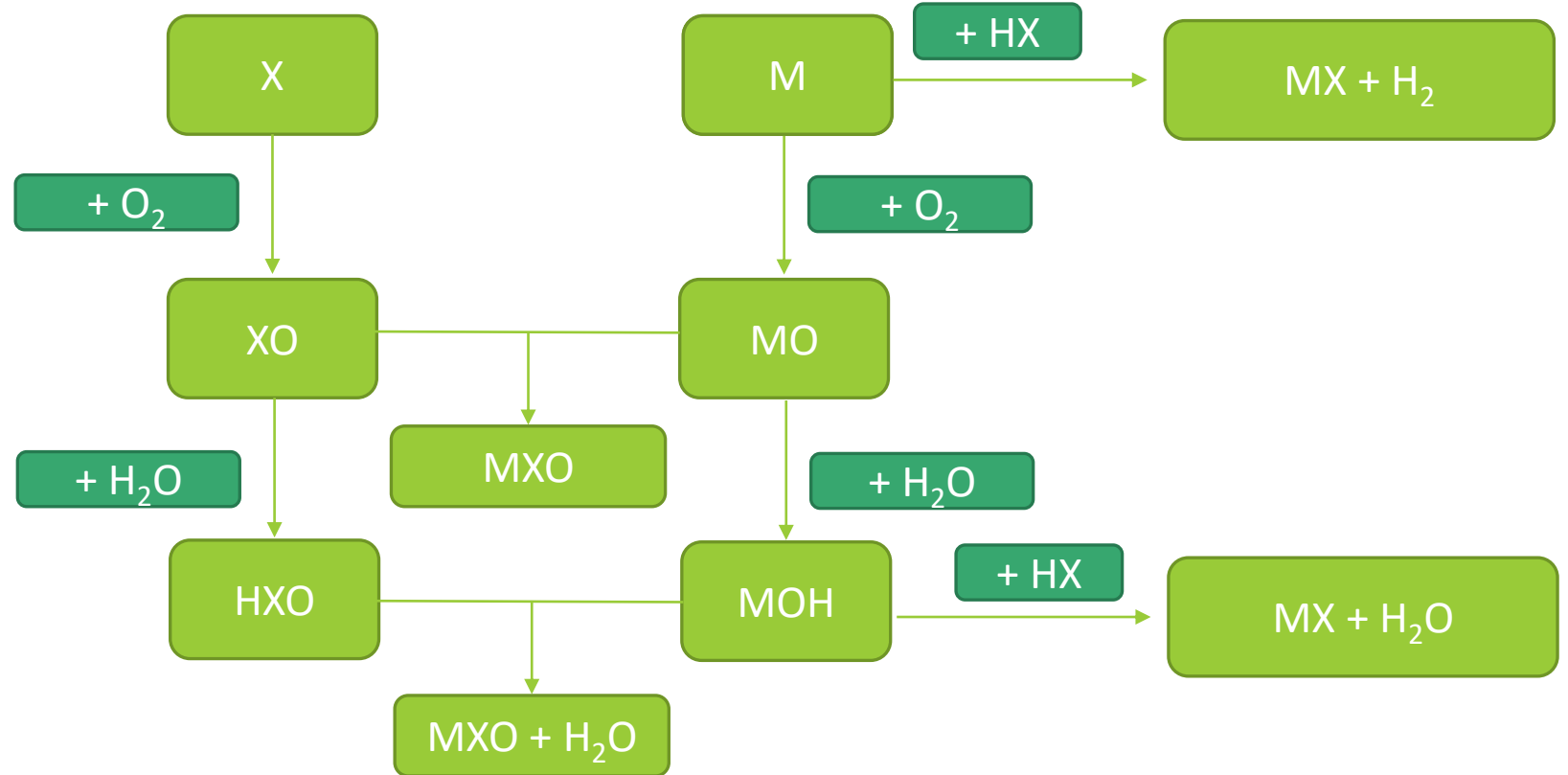
REACTION ENTRE L'ACIDE ET LA BASE



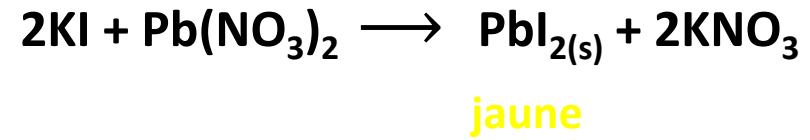
3

SUPPRESSION DE L'EAU UTILISÉE DANS L'ÉTAPE 1

5. Réactions de neutralisation



6. Réactions de précipitation



Précipitation = **force motrice** de la réaction



6. Réactions de précipitation

Cations Anions		NH ₄ ⁺	Li ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺	Ba ²⁺	Al ³⁺	Cu ²⁺	Fe ²⁺	Fe ³⁺	Ni ²⁺	Zn ²⁺	Hg ²⁺	Ag ⁺	Sn ²⁺	Pb ²⁺
Acétate	CH ₃ COO ⁻	○	○	○	○	○	○	○	○	○	○	○	—	○	○	●	—	○
Nitrate	NO ₃ ⁻	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Chlorure	Cl ⁻	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	●
Bromure	Br ⁻	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	●
Iodure	I ⁻	○	○	○	○	○	○	○	○	○	○	—	○	○	○	●	○	●
Sulfate	SO ₄ ²⁻	○	○	○	○	○	●	●	○	○	○	○	○	○	—	○	○	●
Sulfite	SO ₃ ²⁻	○	○	○	○	●	●	●	—	—	●	—	—	●	—	●	—	●
Sulfure	S ²⁻	○	○	○	○	—	—	—	—	●	●	—	●	●	●	●	●	●
Carbonate	CO ₃ ²⁻	○	●	○	○	●	●	●	—	—	●	—	●	●	—	●	—	●
Hydroxyde	OH ⁻	○	○	○	○	●	●	○	●	●	●	●	●	●	●	—	●	●
Phosphate	PO ₄ ³⁻	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	—	●
Chromate	CrO ₄ ²⁻	○	○	○	○	○	○	●	—	—	—	●	●	●	—	●	—	●

○ = soluble

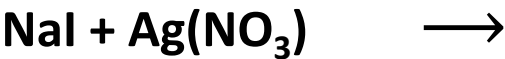
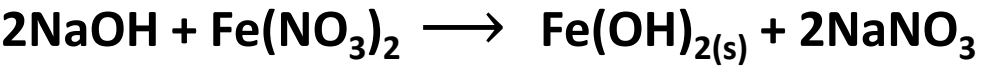
● = insoluble (peu soluble)

— = n'existe pas ou se décompose dans l'eau

6. Réactions de précipitation

Cations		NH ₄ ⁺	Li ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺	Ba ²⁺	Al ³⁺	Cu ²⁺	Fe ²⁺	Fe ³⁺	Ni ²⁺	Zn ²⁺	Hg ²⁺	Ag ⁺	Sn ²⁺	Pb ²⁺
Anions																		
Acétate	CH ₃ COO ⁻	○	○	○	○	○	○	○	○	○	○	○	—	○	○	●	—	○
Nitrate	NO ₃ ⁻	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Chlorure	Cl ⁻	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	●
Bromure	Br ⁻	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	○	●
Iodure	I ⁻	○	○	○	○	○	○	○	○	○	○	—	○	○	●	●	○	●
Sulfate	SO ₄ ²⁻	○	○	○	○	○	●	●	○	○	○	○	○	○	—	○	○	●
Sulfite	SO ₃ ²⁻	○	○	○	○	●	●	●	—	—	●	—	—	●	—	●	—	●
Sulfure	S ²⁻	○	○	○	○	—	—	—	—	●	●	—	●	●	●	●	●	●
Carbonate	CO ₃ ²⁻	○	●	○	○	●	●	●	—	—	●	—	●	●	—	●	—	●
Hydroxyde	OH ⁻	○	○	○	○	●	●	○	●	●	●	●	●	●	●	—	●	●
Phosphate	PO ₄ ³⁻	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	—	●
Chromate	CrO ₄ ²⁻	○	○	○	○	○	○	●	—	—	—	●	●	●	—	●	—	●

○ = soluble ● = insoluble (peu soluble) — = n'existe pas ou se décompose dans l'eau



Ressources des cours prépas de chimie :

Disponibles sur <https://concentre-chimie.unamur.be/videos>



Sessions prepa - UNamur

- notes de cours + dia