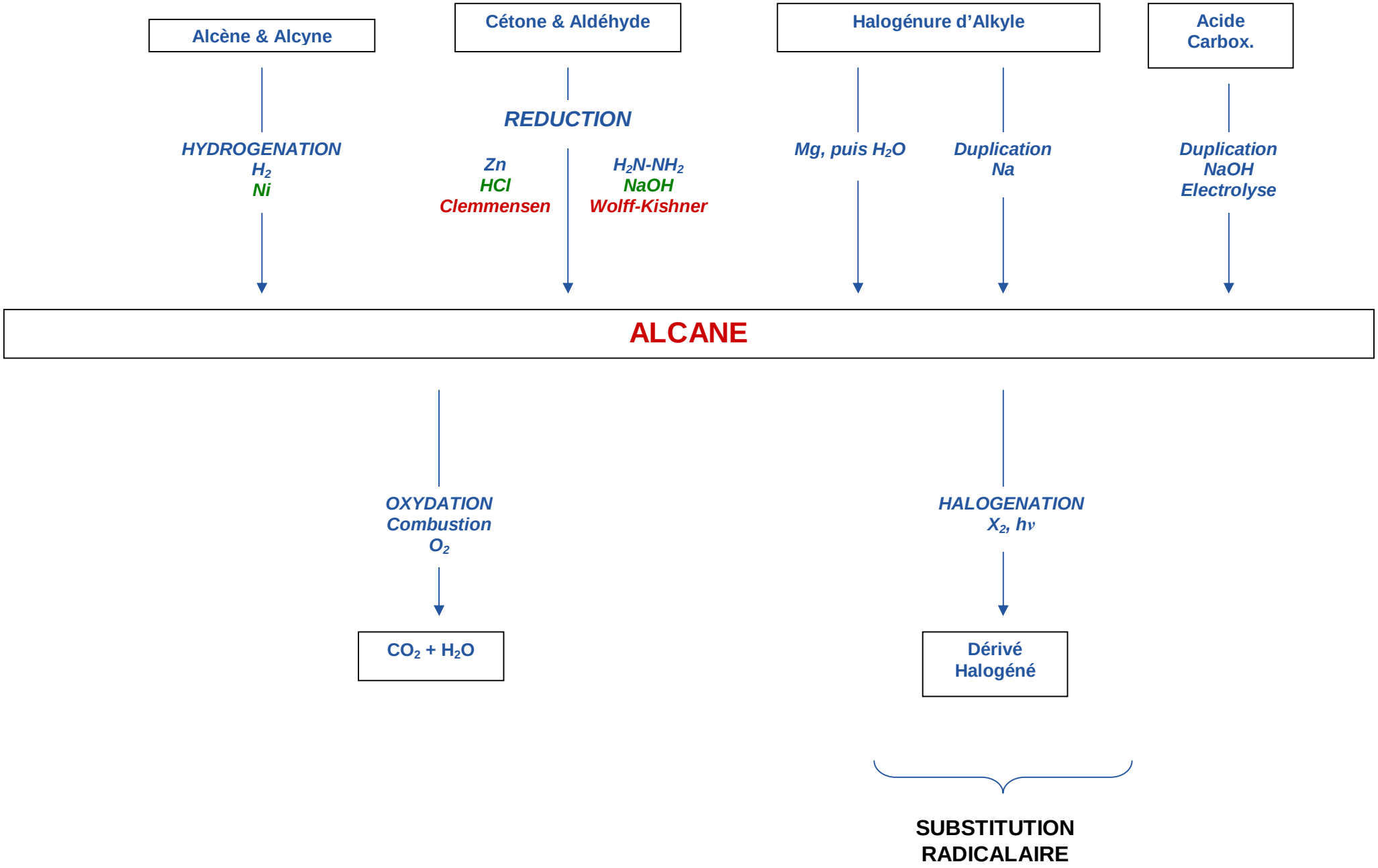
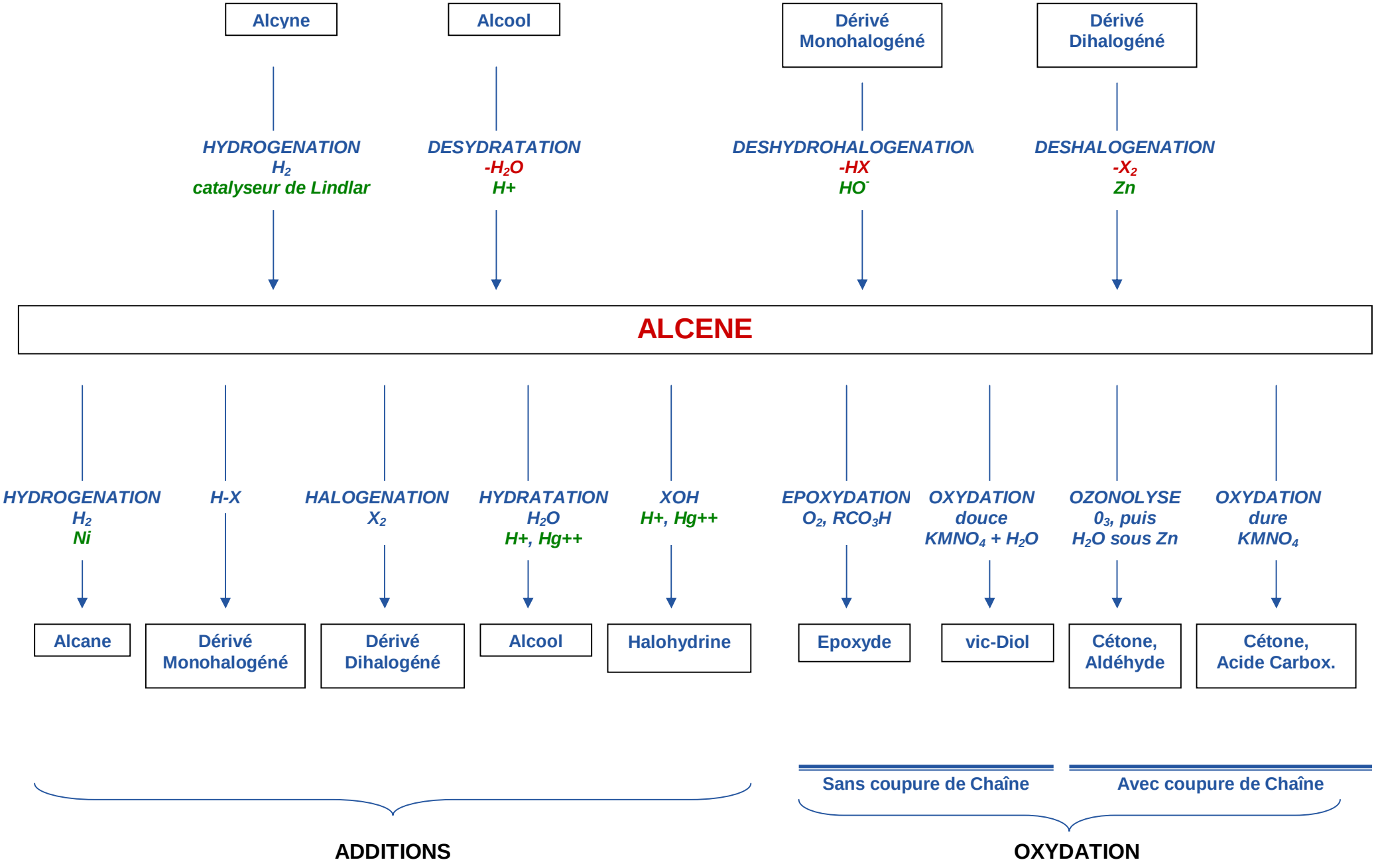
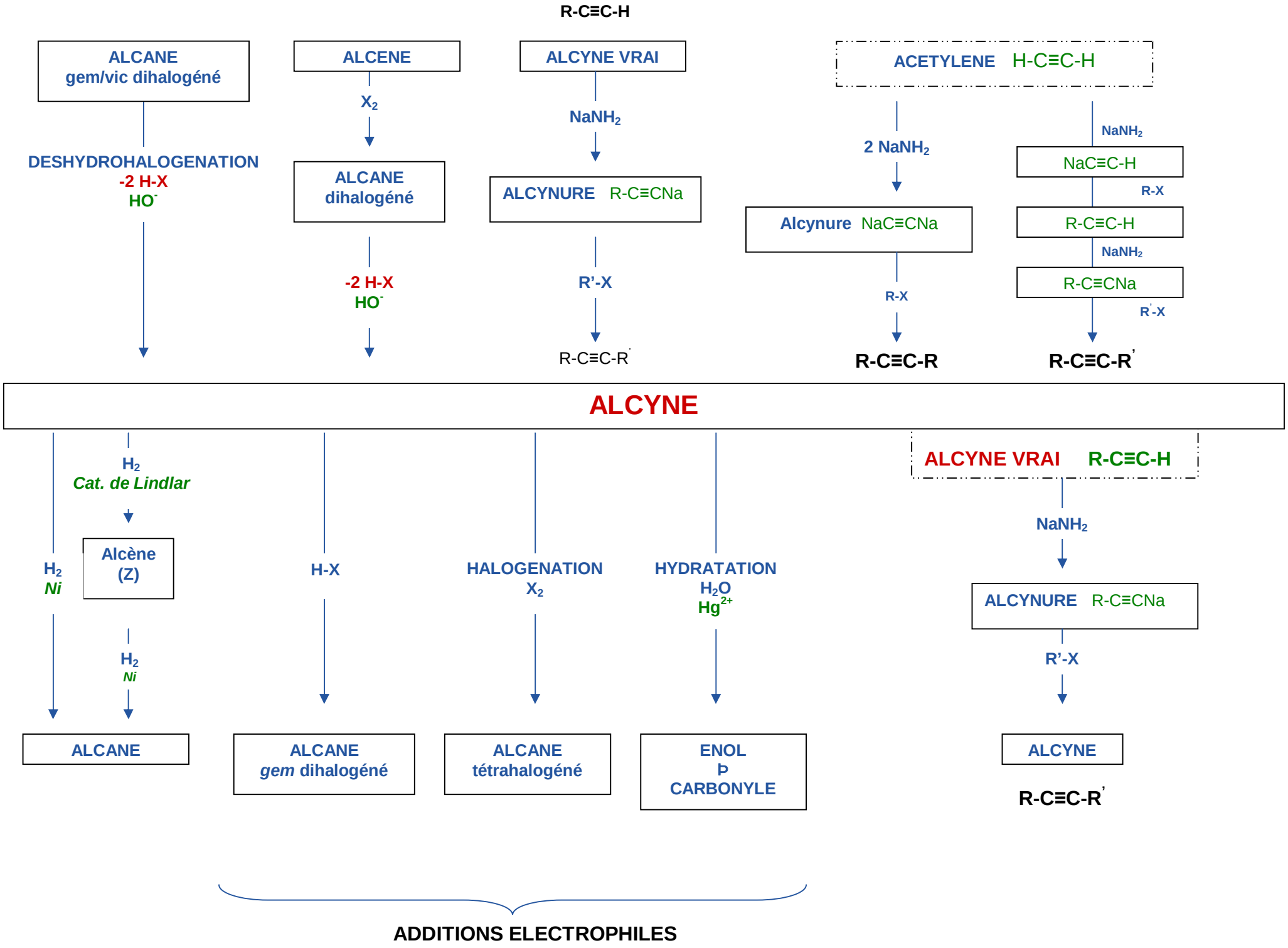
Chimie Organique

1. Alcanes
2. Alcènes
3. Alcynes
4. Arènes
5. Dérivés Halogénés
6. Organomagnésiens


Alcène & Alcyne
Cétone & Aldéhyde
Halogénure d'Alkyle
Acide Carbox.
HYDROGENATION
H_2
Ni
REDUCTION
Zn
HCl
Clemmensen
H_2N-NH_2
NaOH
Wolff-Kishner
Mg, puis H_2O
Duplication
Na
Duplication
NaOH
Electrolyse
ALCANE
OXYDATION
Combustion
O_2
HALOGENATION
X_2, hν
$CO_2 + H_2O$
Dérivé Halogéné
SUBSTITUTION RADICALAIRE


Alcyne
Alcool
Dérivé Monohalogéné
Dérivé Dihalogéné
HYDROGENATION
H_2
catalyseur de Lindlar
DESYDRATATION
$-H_2O$
H+
DESHYDROHALOGENATION
-HX
HO^-
DESHALOGENATION
$-X_2$
Zn
ALCENE
HYDROGENATION
H_2
Ni
H-X
HALOGENATION
X_2
HYDRATATION
H_2O
H+, Hg++
XOH
H+, Hg++
EPOXYDATION
O_2, RCO_3H
OXYDATION
douce
$KMNO_4 + H_2O$
OZONOLYSE
0_3, puis
H_2O sous Zn
OXYDATION
dure
$KMNO_4$
Alcane
Dérivé Monohalogéné
Dérivé Dihalogéné
Alcool
Halohydrine
Epoxyde
vic-Diol
Cétone, Aldéhyde
Cétone, Acide Carbox.
Sans coupure de Chaîne
Avec coupure de Chaîne
ADDITIONS
OXYDATION


R-C≡C-H
ALCANE
gem/vic dihalogéné
DESHYDROHALOGENATION
-2 H-X
HO-
ALCENE
X2
ALCANE
dihalogéné
-2 H-X
HO-
ALCYNE VRAI
NaNH2
ALCYNURE R-C≡CNa
R'-X
R-C≡C-R'
ACETYLENE H-C≡C-H
2 NaNH2
Alcynure NaC≡CNa
R-X
R-C≡C-R
NaNH2
NaC≡C-H
R-X
R-C≡C-H
NaNH2
R-C≡CNa
R'-X
R-C≡C-R'
ALCYNE
H2
Cat. de Lindlar
Alcène
(Z)
H2
Ni
H2
Ni
ALCANE
H-X
ALCANE
gem dihalogéné
HALOGENATION
X2
ALCANE
tétrahalogéné
HYDRATATION
H2O
Hg2+
ENOL
Þ
CARBONYLE
ALCYNE VRAI R-C≡C-H
NaNH2
ALCYNURE R-C≡CNa
R'-X
ALCYNE
R-C≡C-R'
ADDITIONS ELECTROPHILES

ARENE

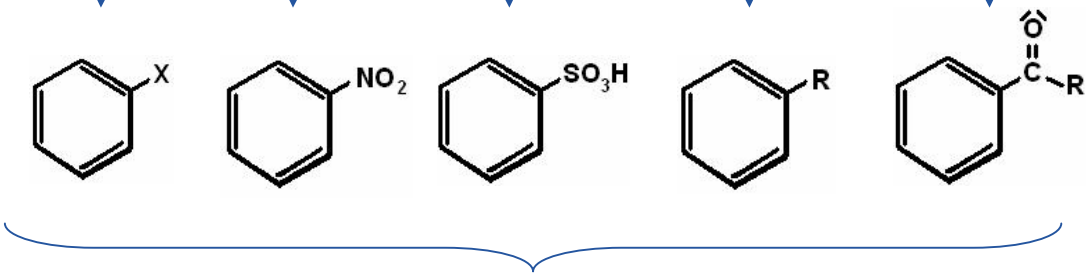
HALOGENATION
X_2
Acide de Lewis

NITRATION
HNO_3
H_2SO_4

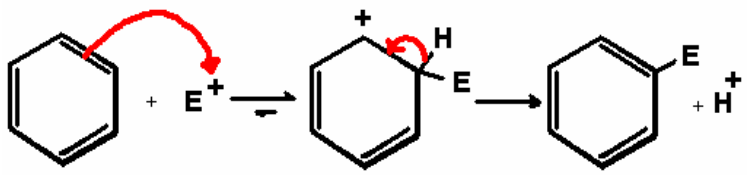
SULFONATION
H_2SO_4 Conc.

ALKYLATION
R-X
Acide de Lewis

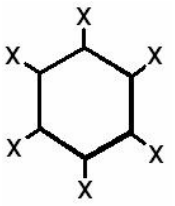
ACYLATION
RCOX
Acide de Lewis



SUBSTITUTION ELECTROPHILE :



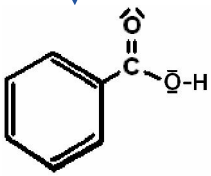
HALOGENATION
X_2, hν



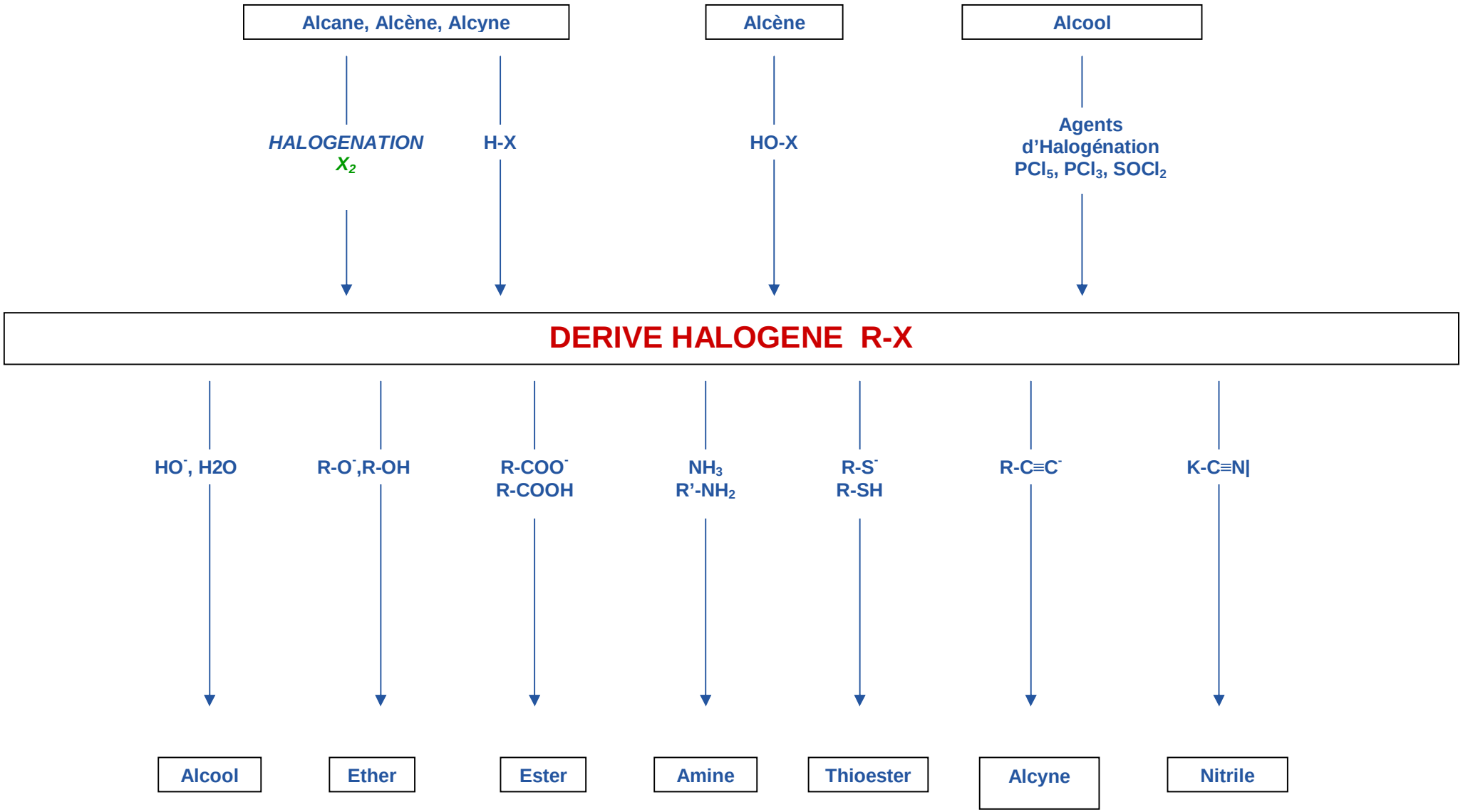
SUBSTITUTION RADICALAIRE

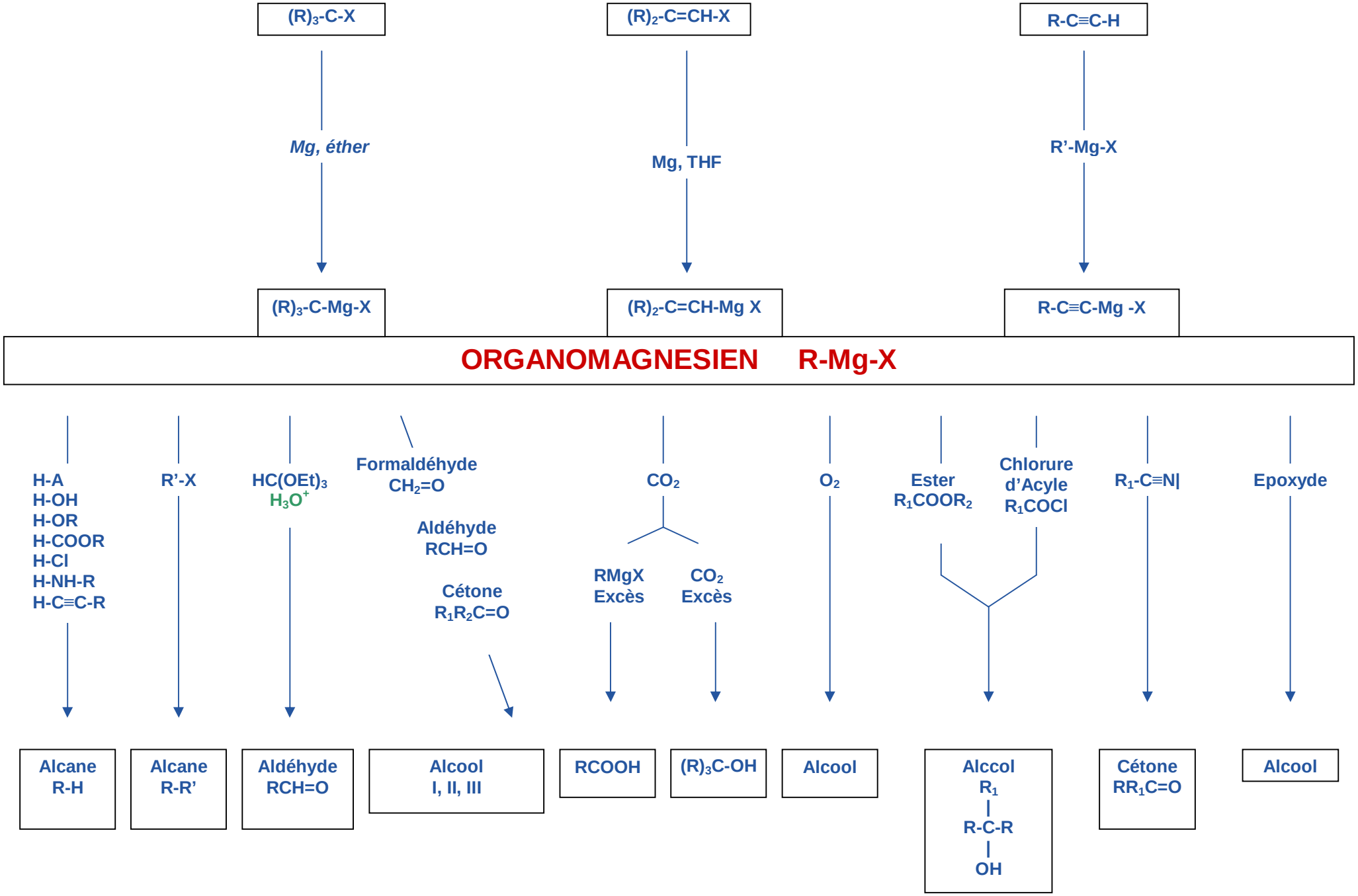
φ-R

OXYDATION
$KMNO_4$



ACIDE BENZOÏQUE


Alcane, Alcène, Alcyne
Alcène
Alcool
HALOGENATION
X2
H-X
HO-X
Agents
d'Halogénation
PCl5, PCl3, SOCl2
DERIVE HALOGENE R-X
HO-, H2O
R-O-,R-OH
R-COO-
R-COOH
NH3
R'-NH2
R-S-
R-SH
R-C≡C-
K-C≡N|
Alcool
Ether
Ester
Amine
Thioester
Alcyne
Nitrile


(R)3-C-X
(R)2-C=CH-X
R-C≡C-H
Mg, éther
Mg, THF
R'-Mg-X
(R)3-C-Mg-X
(R)2-C=CH-Mg X
R-C≡C-Mg -X
ORGANOMAGNESIEN R-Mg-X
H-A
H-OH
H-OR
H-COOR
H-Cl
H-NH-R
H-C≡C-R
R'-X
HC(OEt)3
H3O+
Formaldéhyde
CH2=O
Aldéhyde
RCH=O
Cétone
R1R2C=O
CO2
RMgX
Excès
CO2
Excès
O2
Ester
R1COOR2
Chlorure
d'Acyle
R1COCl
R1-C≡N|
Epoxyde
Alcane
R-H
Alcane
R-R'
Aldéhyde
RCH=O
Alcool
I, II, III
RCOOH
(R)3C-OH
Alcool
Alccol
R1
R-C-R
OH
Cétone
RR1C=O
Alcool