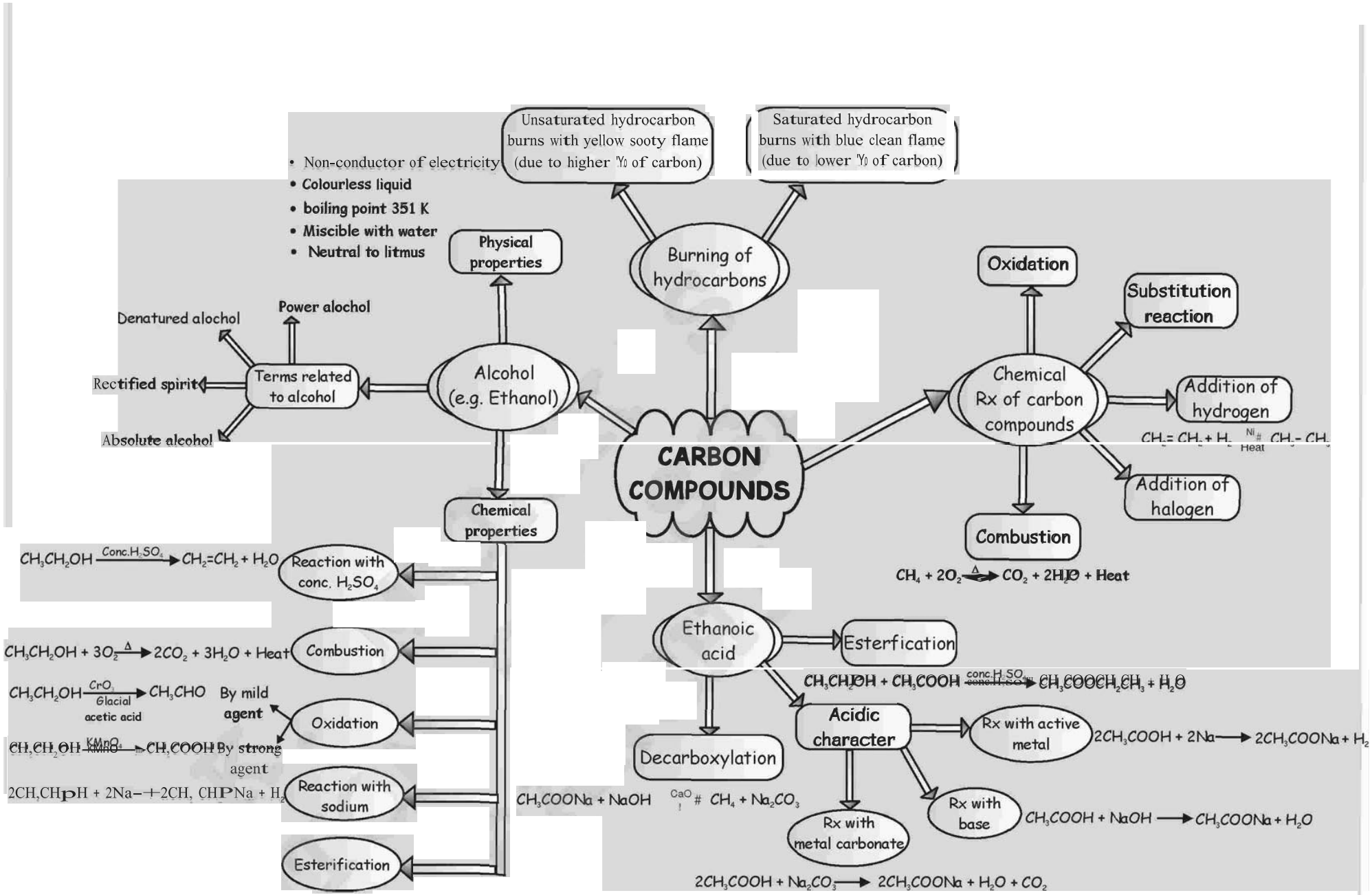
CARBON COMPOUNDS
Alcohol (e.g. Ethanol)
Physical properties
• Non-conductor of electricity
• Colourless liquid
• boiling point 351 K
• Miscible with water
• Neutral to litmus
Terms related to alcohol
Denatured alochol
Power alochol
Rectified spirit
Absolute alcohol
Chemical properties
Reaction with conc. H2SO4
CH3CH2OH → CH2=CH2 + H2O
Combustion
CH3CH2OH + 3O2 → 2CO2 + 3H2O + Heat
Oxidation
CH3CH2OH → CH3CHO By mild agent
Glacial acetic acid
CH3CH2OH → CH3COOH By strong agent
Reaction with sodium
2CH3CH2OH + 2Na → 2CH3CH2ONa + H2
Esterification
Burning of hydrocarbons
Unsaturated hydrocarbon burns with yellow sooty flame (due to higher % of carbon)
Saturated hydrocarbon burns with blue clean flame (due to lower % of carbon)
Chemical Rx of carbon compounds
Oxidation
Substitution reaction
Addition of hydrogen
CH2= CH2 + H2 → CH3- CH3
Addition of halogen
Combustion
CH4 + 2O2 → CO2 + 2H2O + Heat
Ethanoic acid
Esterfication
CH3CH2OH + CH3COOH → CH3COOCH2CH3 + H2O
Acidic character
Rx with active metal
2CH3COOH + 2Na → 2CH3COONa + H2
Rx with base
CH3COOH + NaOH → CH3COONa + H2O
Rx with metal carbonate
2CH3COOH + Na2CO3 → 2CH3COONa + H2O + CO2
Decarboxylation
CH3COONa + NaOH → CH4 + Na2CO3