

# αναισθησιολογία

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FAR344/4

## Inhalation anaesthesia

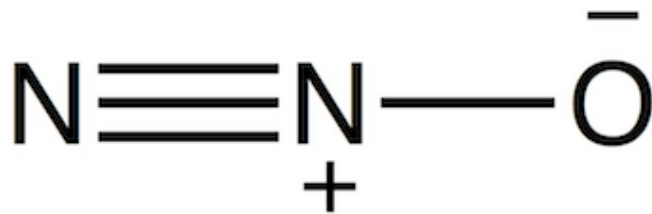
Chlorinated hydrocarbons  
Volatile Hydrocarbons

Nitrous oxide

Fluorinated hydrocarbons

## Intravenous anaesthesia

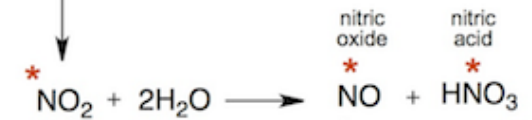
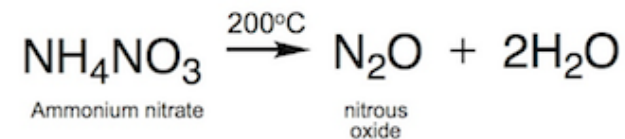
### Nitrous oxide



its other names:  
nitrogen oxide  
dinitrogen monoxide  
laughing gas

weakest, but safest InhA  
may get bouts of hysteria  
rapid recovery

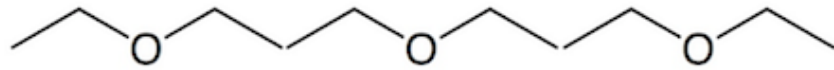
## Production of Nitrous Oxide



\* toxic/fatal

O<sub>2</sub>

# Ether



its other names:

diethyl ether  
ethane

a smell  
volatile, 34.6°C  
never still...

chemical properties

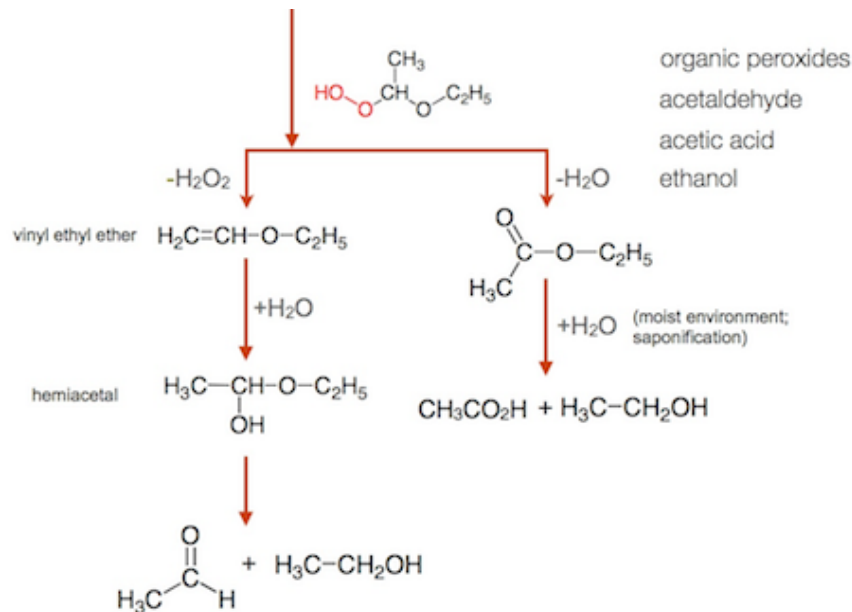
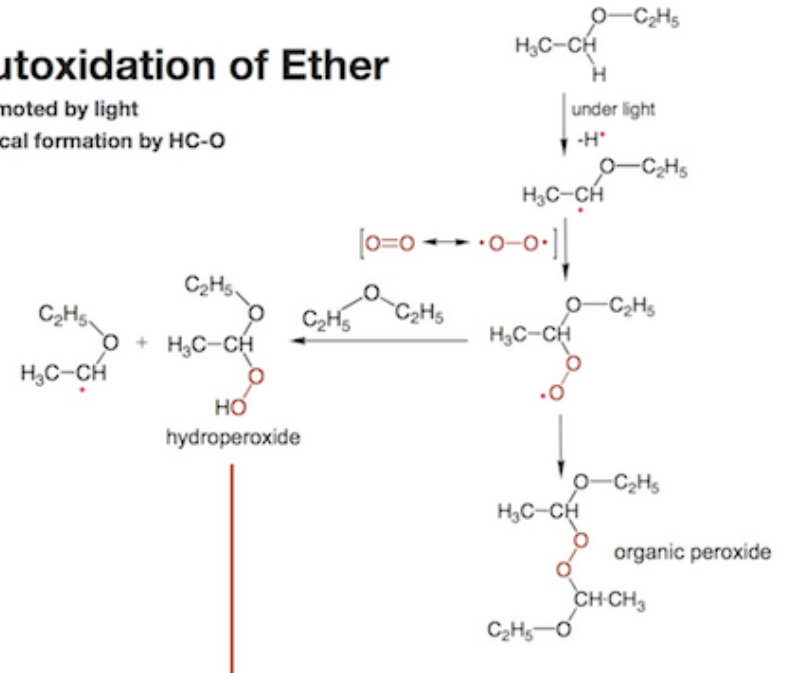
flammable

explosive when mixed with air, nitrous oxide or O<sub>2</sub>

fairly stable chemically to acids & alkalis except to cold hydrogen iodide solution

## Autoxidation of Ether

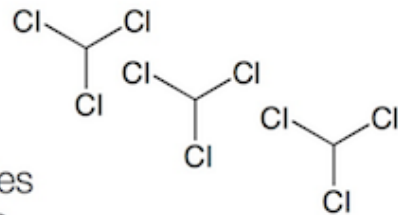
promoted by light  
radical formation by HC-O



## Chloronated Anaesthesia

## Chloroform

its other names:  
trichloromethane



chemical properties

colourless; bp ~ 60°C

slightly soluble in water

miscible with non-polar solvents

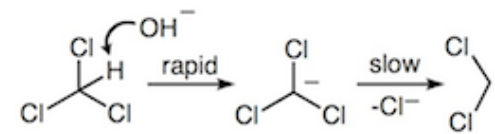
potent anaesthesia

good analgesic effects

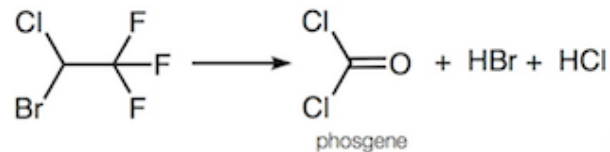
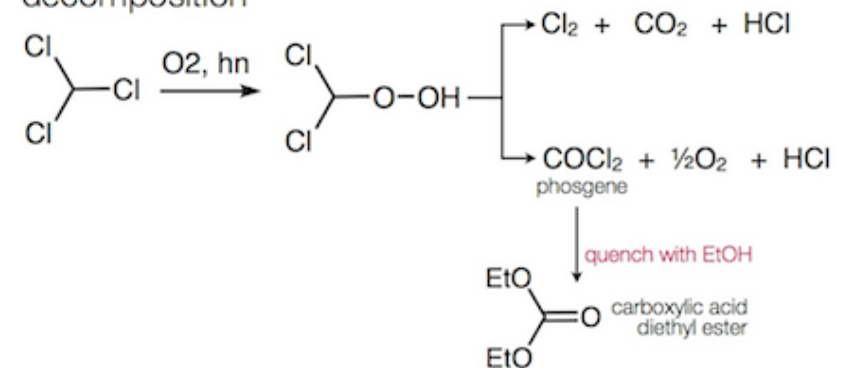
but has **serious cardiac arrhythmias** & **nephrotoxic**  
apart from **well known carcinogenic** effects

## Chloroform

Cl-elimination



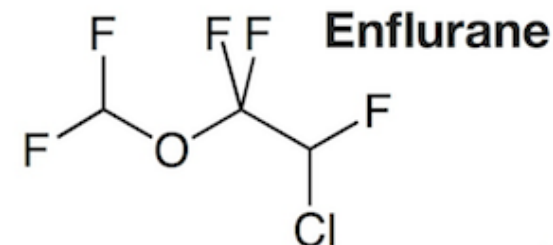
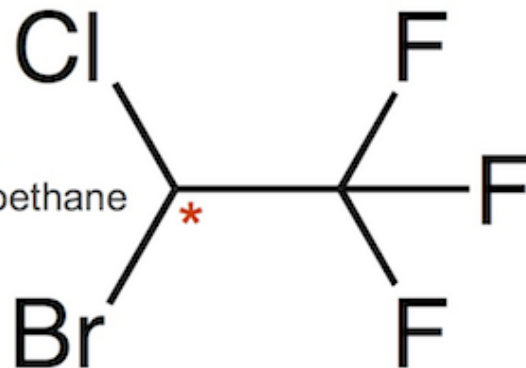
decomposition



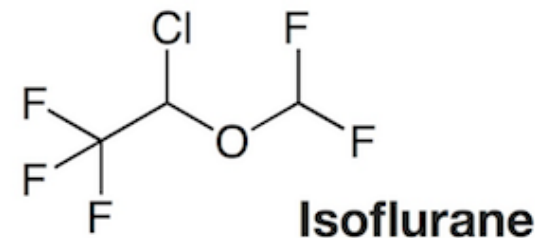
storage conditions:  
in dark, amber  
bottle with thymol

## Halothane

\* (*R,S*)-2-Bromo-2-  
chloro-1,1,1-trifluoroethane



quite stable chemically,  
unlike halothane



## Intravenous Anaesthesia

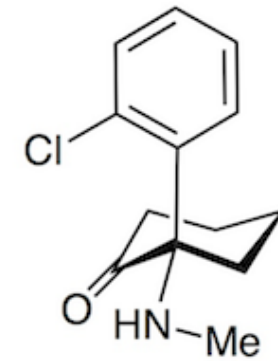
### Ketamine

(*R,S*)-2-(2'-chlorophenyl)-2-methylamino-cyclohexan-1-one

injection, potent & rapid acting  
short acting (10-25 mins)

paediatric & induction  
anaesthesia

sold as racemate

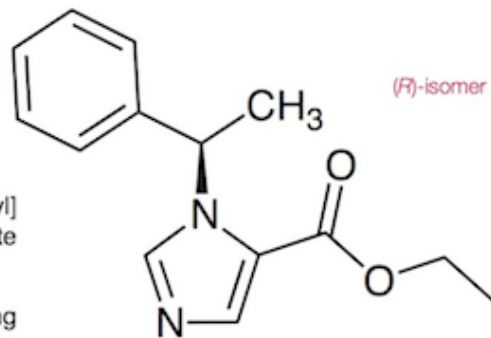


### Etomidate

ethyl 3-[(1*R*)-1-phenylethyl]  
imidazole-4-carboxylate

injection, potent & rapid acting  
extremely short acting (<3 mins)

induction anaesthesia



### Thiopental sodium

ultra short acting barbiturates

induction anaesthesia

