

**PROHIBITION  
1919 - 2019**

# « PROHIBITED »

**Disambiguation : wine alcohol vs  
adulterated, falsified, denatured alcohol**

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**CNRS**

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PROHIBITION  
1919 - 2019

*Oct. 28 1919*

*« Volstead act » « National Prohibition Act »*

*18th Amendment of US Constitution*

*« What's that hooch? »*

(Mais qu'est ce que c'est que ce tord-boyaux ?)



# « Temperance »

(Abstinence)

The Temperance movement hoped that outlawing “Liquor” would reduce crime

# War against *Liquor*



Carrie Nation





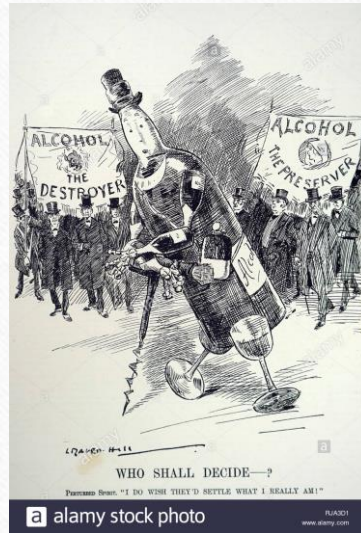


## The Wet



- New immigrants Polish , Italian ...
- Roman Catholics
- Working class
- Poor

## The Actors



## The Dry



- WASPs (White anglosaxon protestants)
- IOR (Independent Order of Rechabites)
- IOGT (Int. Org. Of Good Templars)
- NUWSS (Women Suffrage activists)
- Wealthy



## Protest for Wine and Beer



Gathering at the US Capitol in support of the exemption of beer and wine from the 18th Amendment in 1919. Editorial credit: Everett Historical / Shutterstock.com

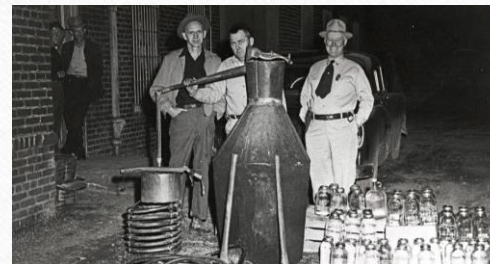
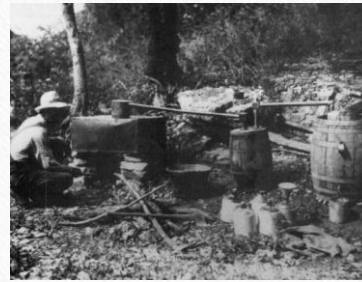


# Reaction



Development of crime:

- Moonshine stills
- Smuggling illegal spirit from other countries
- Mafia
- Bootleggers
- Looting of industrial alcohol
- Wood spirit



Ten Days' Accumulation of Stills Confiscated By Police and Federal Agents, Stored In Atty. Cohen's Office As "Evidence"



## Denaturation :

*“How the US government once poisoned alcohol to get people to stop drinking”*

- Congress and the White House doubled the amount of methanol in industrial liquor and added benzine to the mix. The poisonous substances were meant to discourage people from drinking bootleg products. (New York Times)



### GOVERNMENT TO DOUBLE ALCOHOL POISON CONTENT AND ALSO ADD BENZINE

#### SMELL WARNS DRINKERS

Chemists Say Formula Is  
No More Dangerous  
Than One Now Used.

#### “SUICIDE,” SAYS WHEELER

Edwards and Hinckley Assail  
His “Callous” Attitude Toward  
Liquor Deaths.

#### 1926 CITY TOLL MAY BE 800

30 Holiday Victims—Poland  
Offers Legal Aid to Their Kin—  
Phelps Hits Federal Policy.

*Special to The New York Times.*

WASHINGTON, Dec. 29. — The percentage of wood alcohol used in denaturing industrial alcohol for twenty years, including the period of prohibition, will be doubled when the revised “completely denatured alcohol Formula No. 5” goes into effect on Jan. 1.

This revision was actually approved by Secretary Mellon on Oct. 8. But the fact that the wood alcohol content required was twice that which had been used attracted little attention outside the industrial alcohol trade. The issuance of the new regulations nearly three months before the effective date was to enable manufacturers to prepare their stocks to comply with the new regulations.

No. 5 is one of two general formulas for industrial alcohol that will be effective after Jan. 1. Three have been dropped. In addition to these two, there will be continued what are known as “special formulas” for specific preparations.





# The « Chemists War »

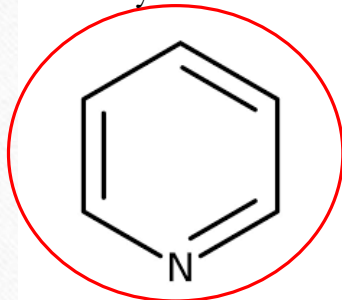


Pr. Deborah Blum  
Journaliste scientifique  
Prix Pulitzer

- To prevent bootleggers from using industrial ethyl alcohol to produce illegal beverages, the federal government ordered the poisoning of industrial alcohols. In response, bootleggers hired chemists who successfully renatured the alcohol to make it drinkable. As a response, the Treasury Department required manufacturers to add more deadly poisons, including the particularly deadly methyl alcohol, consisting of 4 parts methanol 2.25 parts pyridine base and 0.5 parts benzene per 100 parts ethyl alcohol.
- Blum, Deborah (2012). *The Poisoners Handbook*. New York, New York: Penguin Books. pp. Ch. 2. [ISBN 978-0143118824](#).



Pyridine



## The « Chemists War »



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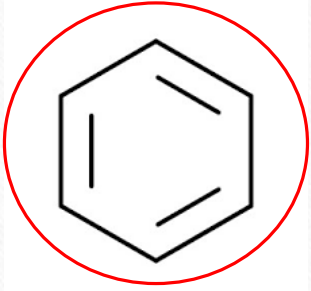
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Fragrance of dead fish and widely spread myth of causing impotence and infertility for men





Benzene



# The « Chemists War »



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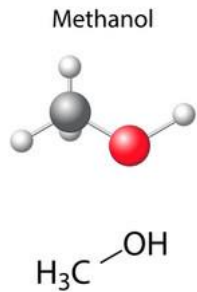
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Benzene :

Numerous epidemiologic, clinical, and laboratory data link **benzene** to aplastic anemia, cancer, acute leukemia, bone marrow abnormalities and cardiovascular disease.

U.S. National Institute for Occupational Safety and Health (NIOSH) revised the (IDLH) (Immediately Dangerous to Life and Health) concentration for benzene to 500 ppm (100x)





# La guerre des chimistes



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Methyl alcohol or methanol



# Alcohol – Alcohols? Methanol vs Ethanol

Origin



Wood  
Coal  
Oil  
Gas



Wood Pyrolysis ; coal – oil – gas refining



Sugar  
Fruit  
Cereal

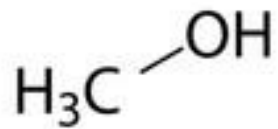
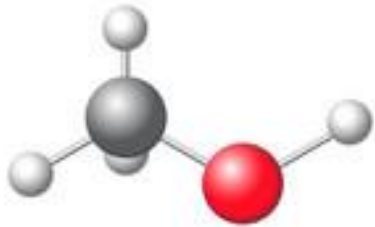


Alcoholic fermentation

# Alcohol – Alcohols?

## Methanol vs Ethanol

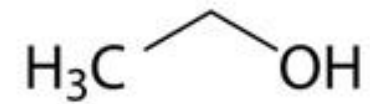
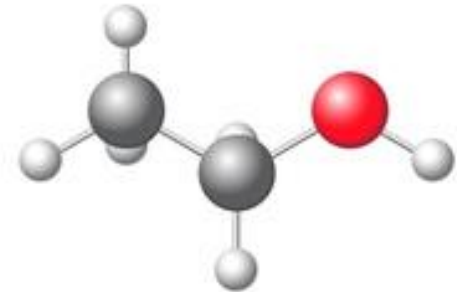
Methanol



Appearance  
Taste  
Smell



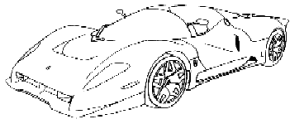
Ethanol





# Alcohol – Alcohols?

## Methanol vs Ethanol



Flammable : 12°C



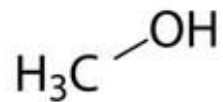
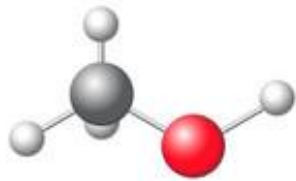
Taste - similar  
Smell – almost none  
Threshold



Flammable : 13 °C



Methanol



4,2 - 5 960 ppm !

49 - 716 ppm



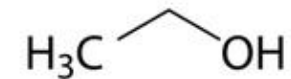
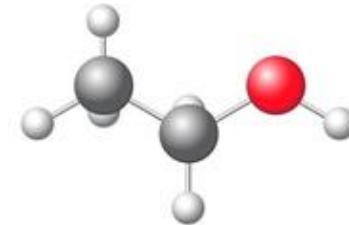
Appearance - identical



Properties

Almost identical

Ethanol

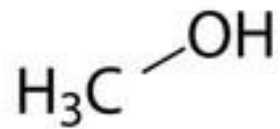
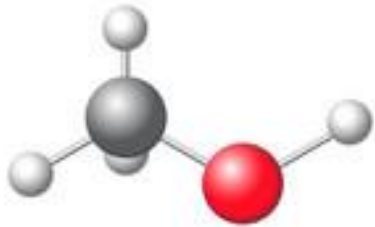


But ..

# Alcohol – Alcohols?

## Methanol vs Ethanol

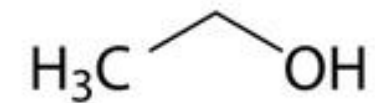
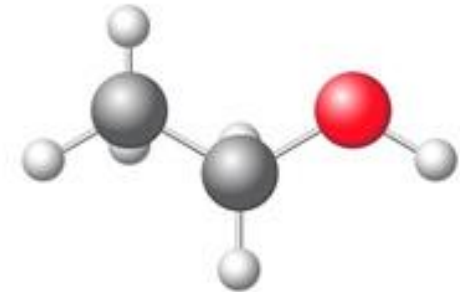
Methanol



DL50 : 5 - 20 g/kg

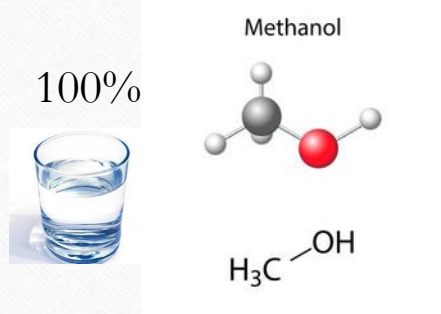


Ethanol

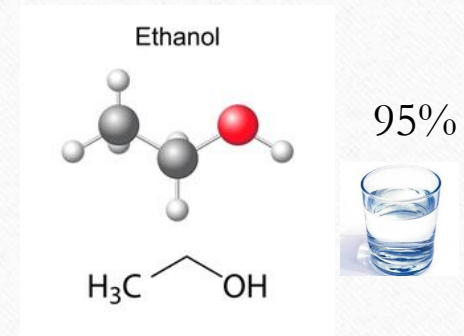


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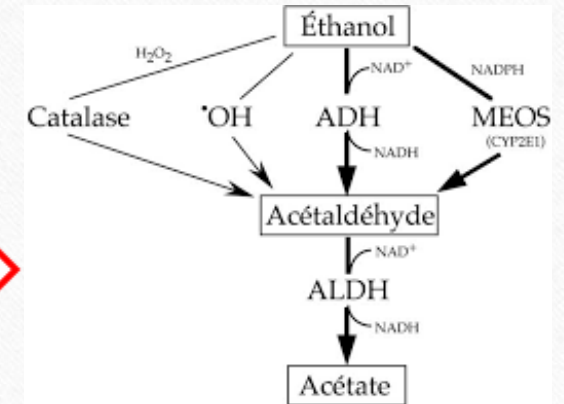
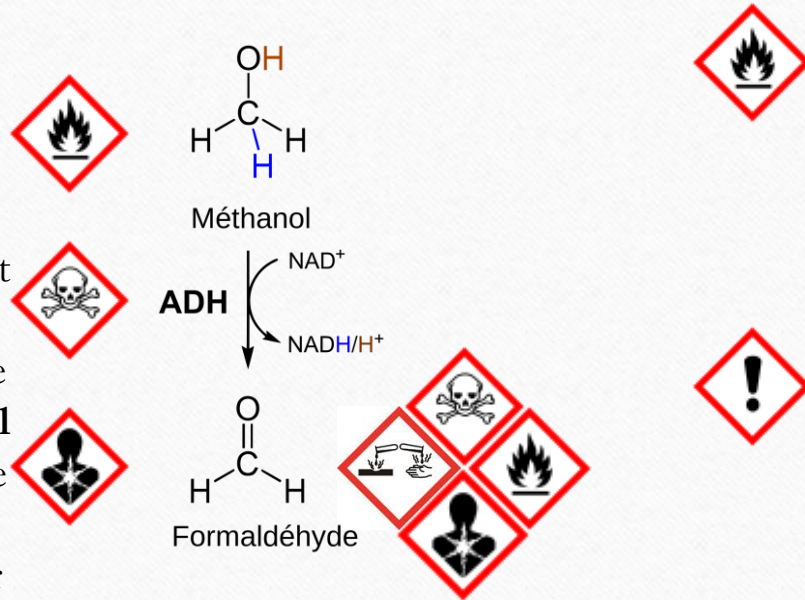




# Alcohol – Alcohols? Methanol vs Ethanol



- **Highly Toxic** to large animals and humans
- May be **fatal/lethal** or cause blindness and damage to the liver, kidneys, and heart if swallowed
- Toxic effects from repeated over exposure have an accumulative effect on the **central nervous** system, especially the optic nerve
- Symptoms may be delayed, become severe **after 12 to 18 hours**, and linger for several days after exposure

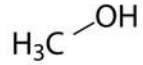
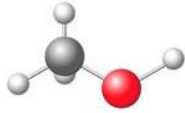


A spoonfull of pure methanol can cause permanent blindness by destruction of the optic nerve !

100%

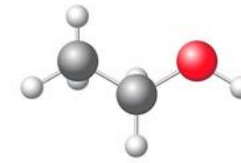


Methanol

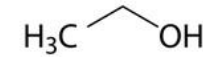


# Alcohol – Alcohols? Methanol vs Ethanol

Ethanol



95%



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~~Methanol~~



~~Methyl alcohol~~



**Methyl Hydroxyde !**

Ethanol

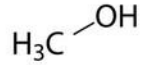
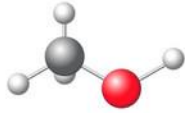
Ethyl alcohol



100%

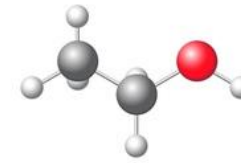


Methanol

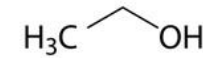


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~~Methanol~~



~~Methyl alcohol~~



**Methyl Hydroxyde !**

Ethanol

Ethyl alcohol

# Prohibition movement hope that outlawing alcohol would reduce crime but..

- Crimes +24%.                      Theft and burglaries +9%
  - Homicides + 12.7%              Assaults and battery +13%
  - Drug addiction + 44.6% Police costs +11.4%.
  - Homicide rates +30-60%        Tax losses - billion\$ !!!
- &
- Poison casualties (10 000 estimated death cases)



[https://en.wikipedia.org/wiki/Prohibition\\_in\\_the\\_United\\_States](https://en.wikipedia.org/wiki/Prohibition_in_the_United_States)

Asbridge, mark; weerasinghe, swarna (2009). "Homicide in chicago from 1890 to 1930: prohibition and its impact on alcohol- and non-alcohol-related homicides". *Addiction*. **104** (3): 355–364. Doi:10.1111/j.1360-0443.2008.02466.X. Issn 1360-0443



5th Dec. 1933

**Good news !**

After 13 years



*“The 21st Amendment to the U.S. Constitution is ratified, repealing the 18th Amendment and bringing an end to the era of national prohibition of alcohol in America. At 5:32 p.m. EST, Utah became the 36th state to ratify the amendment, achieving the requisite three-fourths majority of states’ approval. Pennsylvania and Ohio had ratified it earlier in the day.”*

(Vote du 21<sup>ème</sup> amendement - loi d’abrogation du 18<sup>ème</sup> amendement de la constitution des USA mettant fin à 13 ans de Prohibition.)

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**AND THANK YOU FOR YOUR ATTENTION !**

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