

Group <sup>DoA</sup> A  
 Paper: III "C"  
 Organic Chemistry

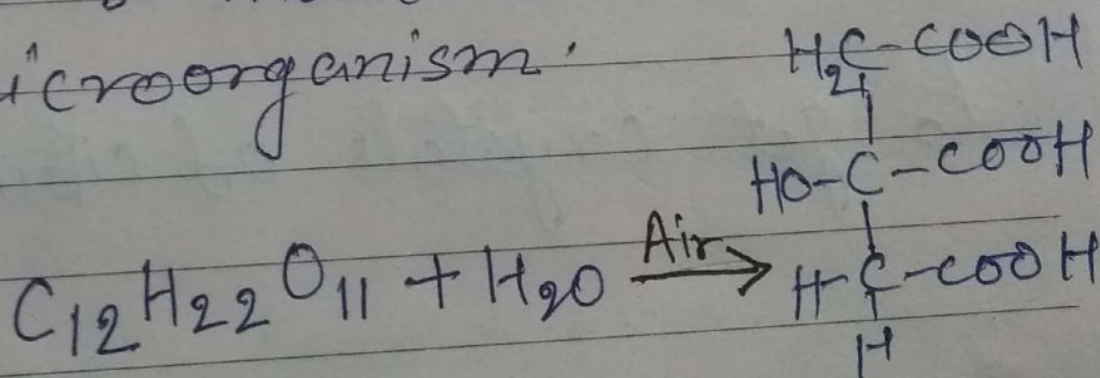
Citric Acid :

It occurs from the juice of citrus fruits such as lemons, limes, oranges etc. Lemon juice contains 7-10 percent citric acid.

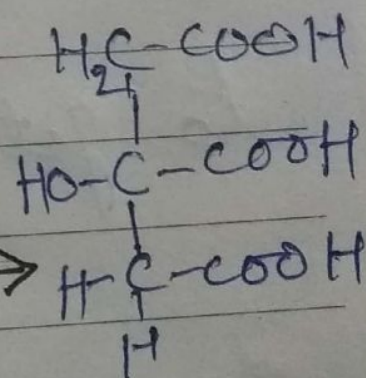
Preparation :

1 From Molasses : Molasses

containing sucrose is diluted with water and subjected to fermentation with microorganism.



Sucrose



Citric acid

# NOTES

Date

The fermentation process is carried for 7 to 10 days

at  $26-28^{\circ}\text{C}$  The resulting

solution of Citric acid is

neutralise with  $\text{Ca}(\text{OH})_2$  to

form insoluble Calcium Citrate. This is washed with water and decomposed with dilute sulphuric acid.

The Calcium sulphate is

filtered off and the solution

concentrated under vacuum

to get crystals of citric acid.

From Petroleum:

Recently it has been shown that certain strains of *Candida* (yeast) can produce citric acid from *n*-Alkanes derived from petroleum. This method when developed will revolutionize the Citric acid industry.

Properties:

Physical: Citric acid forms

large, colourless crystals of monohydrates citric acid  $H_2O$ .

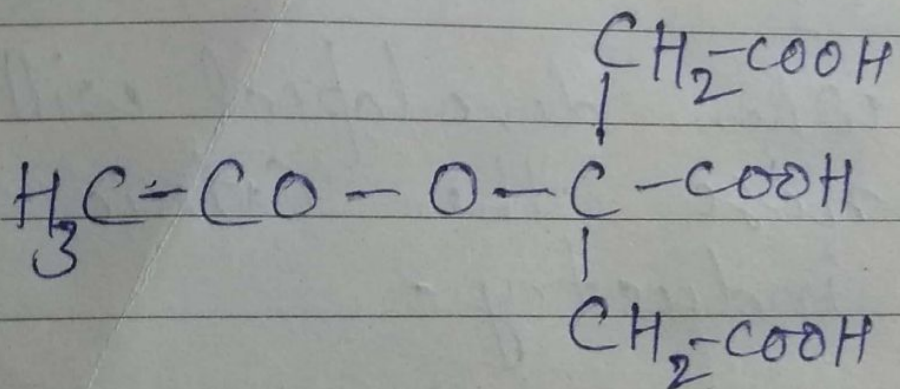
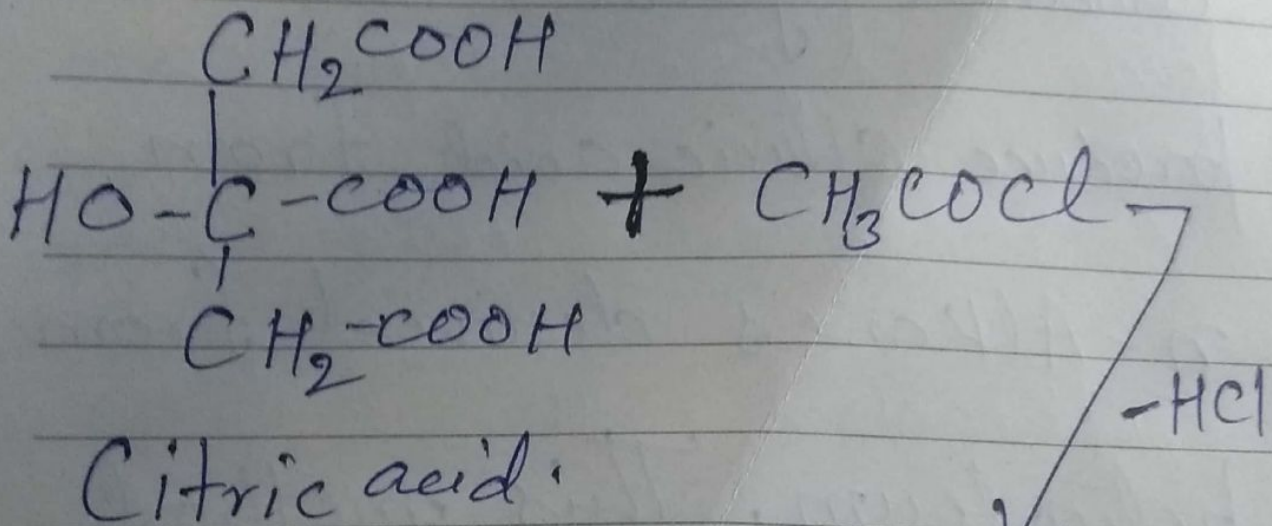
# NOTES

Date

## Chemical Properties:

Acetylation :- It reacts

with acetyl chloride to form mono acetylcitric acid.



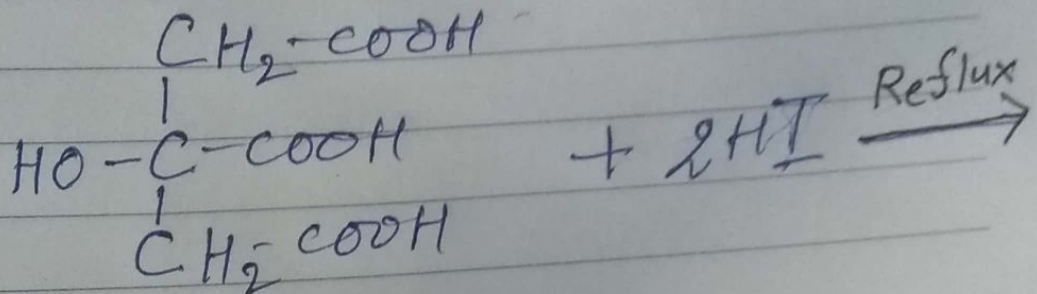
Monoacetylcitric acid.

Reduction :

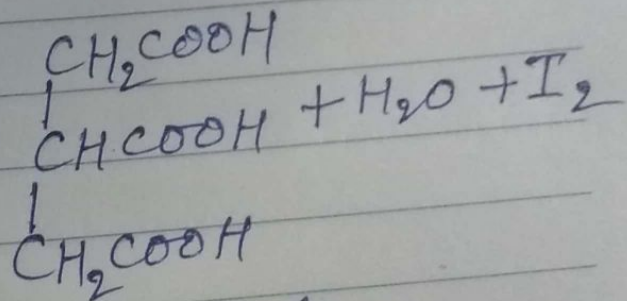
When reduced with

HI, citric acid gives

Tricarballic acid.

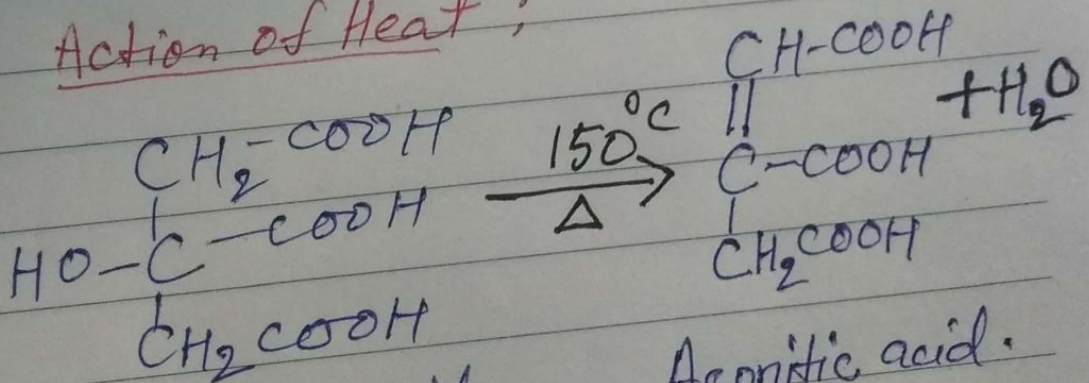


Citric acid.



Tricarballic acid.

Action of Heat :



Citric acid.

Aconitic acid.

To be continued...