Hello students myself Ms.Ravina Jalmi and I am from PES

college. Today. I'll take module number 8 for paper, general

industrial chemistry and paper code is CHC 151.

So this is for BSc First year industrial chemistry.

Paper Code is CHC 151 and paper title is general

industrial chemistry.

This is unit 3 that is renewable natural

resources, module name is alcohol based chemicals.

And will be studying about oxalic acid and furfural.

module number is 8.

This is the outline.

Will be studying alcohol based chemicals. And we will study in detail about oxalic

acid and furfural.

These are the learning outcomes, this module explains about

alcohol based chemicals.

And specifically will be studying about oxalic acid and furfural.,

oxalic acid and its properties.

Preparatory methods and some uses.

This module also explains about furfural and its properties.

Preparatory methods and uses.

So now I will be starting about oxalic acid.

And the chemical formula for oxalic acid is -COOH twice with

one water molecule, which is water of crystallization.

It is sold in the form of colourless crystals. It is the simplest dibasic organic acid.

It is present in the form of potassium or calcium salt in

many plants.

It is moderately soluble in cold

water, extremely soluble in hot and very soluble in

alcohol or ether.

This oxalic acid is produced from many organic, oxygen

containing compounds by fusion with caustic alkali.

Cellulose in the form of wood shavings or sawdust is the usual starting material.

This is heated with a strong aqueous solution of potassium

and sodium hydroxide at a temperature of about 240 to 250 °C.

Next, milk of lime is added to the solution of salt formed, in

in order to precipitate out calcium oxalate. So, after addition of

milk of lime to this solution of salt formed, we get

precipitate of calcium oxalate.

The letter is treated with sulfuric acid, which precipitates calcium sulfate and liberates free

oxalic acid.

This calcium oxalate may be present as an impurity.

It may also be produced by the oxidation of

sugar with nitric acid.

Now here are some uses of oxalic acid.

It is used as a purifying agent in many processes, such as in

the manufacture of glycerine.

It is also used as a precipitant of lime where its removal is desired.

Oxalic acid is also used as a bleaching agent in bleaching

straw or wood to remove ink and rust spots because of its ability to form soluble iron compounds, and therefore it is used to remove ink and rust spots.

It is also used as an ingredient of metal polish.

It is used in printing and dyeing textiles and it is also used for many other purposes.

And it is covered by the Caustic Poison Act.

After oxalic acid next is furfural

It is also called furfuraldehyde.

The chemical formula for furfural is C_4H_3OCHO.

so we know that the basic functional group or the

functional group for aldehyde is CHO and so the formula is C_4H_3O
and CHO, which is the functional group of aldehyde and furfural is an example of

aldehyde. It is a colorless reddish brown liquid.

It is very soluble in water,alcohol or ether.

It darkens on exposure to the air and is obtained from the pentoses of corn, cobs, oat hulls, straw, jute, corn stalks etc.And all these are being digested by using different chemical methods.

So all these names which i had taken that is, pentoses of corn, cobs, oat hulls, straw, jute, corn stalks etc are being digested. And similar products are also used. Which are further treated with concentrated sulfuric acid.

The term furfurol, which implies an alcohol structure, is also used for this aldehyde.

Both refined as well as technical grades are sold in the market.

Here are some uses of furfuraldehyde. It is used in the manufacture of synthetic

raisins, molding compounds.

It is also used in disinfectants,deodorants..

It is used as a preservative of glue. It is used in light

sensitive printing plates, as a nitrocellulose solvent and it

is used for the production of numerous chemical derivatives.

This oxalic acid is inexpensive starting material for

derivatives of furan which is having the four carbons. The chemical formula is C_4H_4O.

Are there examples of alcohol based chemicals, they are Formaldehyde, Alcoholates, acetic acid, acetic anhydride, enols etc.So apart from oxalic acid and furfural,

these examples which I read just now. There are many many alcohol

based chemical compounds which are either naturally produced or

they are chemically synthesized and each of them are having

their characteristic properties and different

methods for preparation and uses are also unique.

So this is the reference that is UGC study material for first year industrial chemistry.

Thank you.