

[Continue]

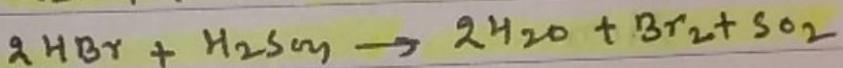
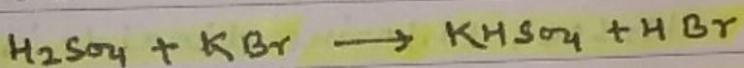
Paper-III

Dr. Sanjay Kumar Yadav:

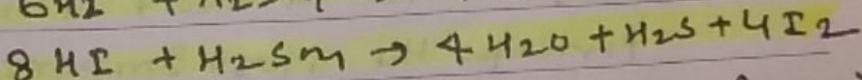
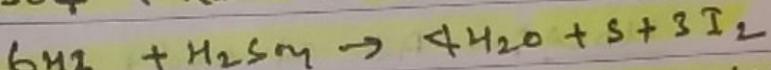
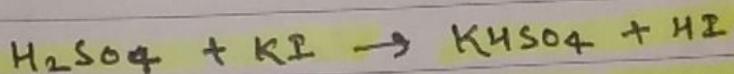
Lecture Notes Series: - 04

Oxyacids of Sulphur& Selenium [Continue]

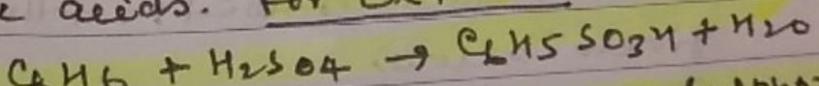
Sulphuric acid also oxidises certain non-metals e.g., Carbon and Sulphur, to their oxides. The oxidising effect of H_2SO_4 is also noticeable in its reaction with bromides and iodides



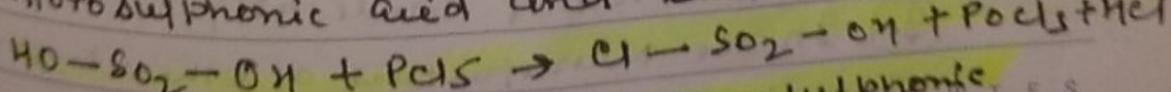
HI reduces H_2SO_4 to sulphur and hydrogen sulphide.



Aromatic Compounds react with H_2SO_4 forming sulphuric acids. For example,

BenzeneBenzene sulphonate acid

Since H_2SO_4 is a dehydroxy compound ($HO-SO_2-OH$) it reacts with Phosphorous Penta chloride giving chlorosulphonic acid and sulphuryl chloride.

Chlorosulphonic acid

S	M	T	W	T	F	S	S	M	T	W	F	S
1	2	3	4	5	6	7	8	9	10	11	12	13
22	23	24	25	26	27	28	29	30			17	18

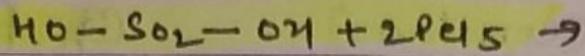
17 18 19 20 21

2nd Sat.

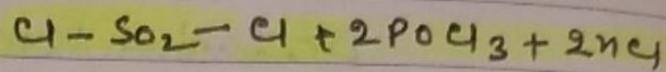
05

WK-45 O

THURSDAY | 310-056

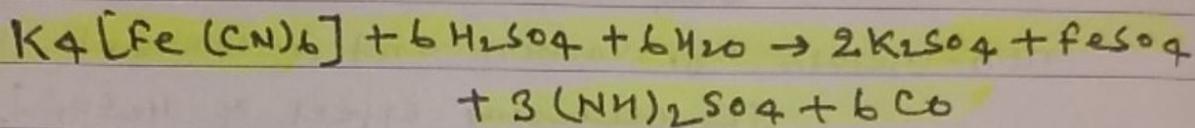
BIRLA
CORPORATION
LIMITED

04 कार्तिक कृष्ण, गुरुवार, सं 2019

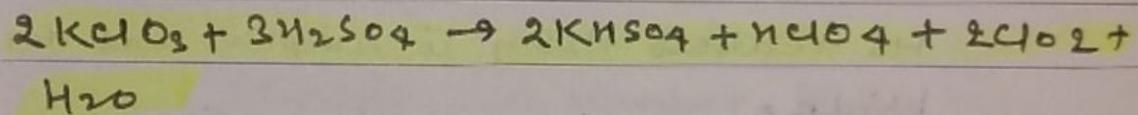


Sulphuryl
Chloride

On heating crystals of Potassium ferrocyanide with concentrated sulphuric acid, Carbon monoxide is evolved.



On heating Potassium chlorate with concentrated H_2SO_4 , Chlorine dioxide is evolved with explosion.



Uses:- As already mentioned H_2SO_4 is perhaps the most important heavy chemistry and finds extensive use in Industry and Laboratory. It is used in following which are given below.

- ① For the Preparation of Fertilizers - ammonium Sulphate and super phosphate
- ② In Petroleum refining to remove unsaturated Compounds (which darken by air oxidation of crude oil)
- ③ In the Manufacture of other important chemicals such as hydrochloric acid, nitric acid, Sulphates of Metals, alums, etc.

22 NOVEMBER

WK-45

311-055 | FRIDAY

[५] कार्तिक कृष्ण, शुक्रवार, सं २०७७ ④ In the preparation of dyes, drugs and disinfectants.

[६] In the 'pickling' of steel before coating it with enamels, tin or zinc

[७] In metallurgical processes for the purification of metals by electrolysis where sulphuric acid is commonly used as bath.

[८] In preparing paints and pigments

[९] In the manufacture of explosives such as nitroglycerine, Gun cotton, T.N.T, etc. H_2SO_4 is used to eliminate the water formed during the reactions.

[१०] In textile and paper industries.

[११] In leather industry for tanning.

[१२] As a dehydrating agent.

[१३] As a laboratory agent.

Structure of H_2SO_4

Sulphuric acid is a dibasic acid and has been assigned the tetrahedral structure as shown.

The high boiling

Point and viscosity of H_2SO_4 indicates association of sulphuric acid molecules due to hydrogen bonding as shown below.

