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Possible Uses of Waste Chlorine

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precision of 5% is obtained in runs of 48 hours duration. 4% CO₂ mixed with air dissolves 1 gram of iron per square centimeter of exposed surface in 735 days while it required 1927 days with air alone. A fall of 25/100 millivolt per centimeter increased the rate of corrosion 28%. 25/1000 millivolt per centimeter had no appreciable effect upon the rate. The conclusion is reached that a fall of more than 25/100 millivolt is necessary. Methods of eliminating corrosion of this type are given.

THE POSSIBILITY OF A NEW VITAMIN FOR REPRODUCTION

V. G. HELLER

Fifth generation animals have been reared on 5 per cent of yeast as the sole source of vitamin B in the diet. This does not support the view that a new vitamin is necessary for reproduction. The majority of the young are not reared on synthetic diets containing as much as 8 per cent of yeast as the only source of vitamin B. 5 per cent of salt mixture 185 in the diet is detrimental to the production of young. The toxicity of yeast is not a factor because third generation animals have been reared on 45, 40, 35 and 30 per cent of yeast in the diet as the sole source of protein and vitamin B. It is believed that high mortality is due to a deficiency of vitamin B and not to vitamin X.

THE PREPARATION OF ACTIVATED CARBON FROM FURFURAL RESIDUES

GALEN HUNT

This method has been developed to utilize the residues from the manufacture of furfural by acid treatment of corn cobs or oat hulls. The residue is mixed with 7.5% by wt. ZnO and 70% HCl (Sp Gr 1.20) and allowed to stand 24 hours. It is then dried and destructively distilled at 550°C. The ash is leached out with 1% HCl and the char dried and heated to 850°C. Treatment yields a char which is the equal of any vegetable char now on the market.

POSSIBLE USES OF WASTE CHLORINE

JACK HUSSEY AND O. R. SWEENEY

The demand for electrolytic caustic has glutted the chlorine market. Studies are underway looking towards the utilization

of chlorine. It has been found that by passing chlorine through lime covered with water in the presence of iron or manganese as a catalyst that practically quantitative yields of oxygen are evolved. The method is believed to be commercially applicable for producing oxygen. It is also a superior method for laboratory demonstration and use.

CONCLUSIONS IN REGARD TO THE METHYLATION OF PHENOL

HARRY F. LEWIS AND WESLEY TRIESCHMANN

As the result of a large number of methylations carried out with phenol with dimethyl sulfate as the methylating agent, the following conclusions have been drawn:

1. Anisol is not methylated by the action of methyl sulfate on an aqueous solution of phenol in either neutral or acid condition.

2. The presence of either sodium or potassium hydroxide results in the methylation of phenol.

3. The amount of methylation is in the same order as the ratio of alkali to phenol, a tenth mol of alkali resulting in about a 10% methylation. An excess of alkali has no influence, at least in the direction of greater action.

4. The second methyl group can be used in methylation to a considerable extent; this is based upon the use of a half mol of dimethyl sulfate and one mol of phenol, in the presence of two to four mols of water and a mol and a half of sodium hydroxide, where yields as high as 70% of anisol have been obtained.

5. Considerable methylation takes place even at low temperatures with the first group entering into the reaction. Practically all of the first group may be used in this way.

6. Other things being equal, an increase in the amount of water present causes a decrease in the amount of methylation, two mols of water to one mol of phenol and one and a half mols of sodium hydroxide being about the lowest practical amount which can be used.

NOTE ON THE HYDROLYSIS OF NITROBENZENE

H. F. LEWIS AND G. W. THIESSEN

Wohl¹ describes the oxidation of nitrobenzene to nitrophenols by the action of powdered potassium hydroxide at temperatures