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A Method of Measuring Rates of Corrosion of Iron in the Presence of Carbon Dioxide and Air and the Influence of Electrical Potentials on Such Rates

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STUDIES ON THE ROLE OF RYE IN THE VIENNA
PROCESS FOR YEAST MANUFACTURE

ELLIS I. FULMER AND ROMA ELMER

A water extract of rye shows an optimum concentration for its effect in causing top growth of yeast. Quantitative studies were reported on the distribution of the yeast throughout a column with various concentrations of the extracts at varying stages in fermentation. Data are discussed relative to the effect of various concentrations of the extract upon the composition of the yeast especially with reference to fat content.

THE PHYSICAL PROPERTIES OF SOME SHORT
PERIOD ANNEAL PRODUCTS OF
WHITE CAST IRON

ANSON HAYES AND W. J. DIEDERICHS

Since very little study of the malleableizing process had been made and also because the properties that were considered of primary importance to the average user of malleable iron were ease of machining and ductility, no attention has been paid to the industrial possibilities of partially graphitized white iron. In annealing periods of less than 11 hours total duration it has been found possible to produce irons ranging from 70,000 strength and 5% stretch to 55,000 and 10% stretch depending on varying rates of cooling of 6°F. per minute to 3°F. per minute from the annealing temperature. The unusual properties of 85,000 strength and 6% stretch has been obtained by a slightly longer annealing method which involves a grain refining process. There should be important industrial uses for these products.

A METHOD OF MEASURING RATES OF CORROSION
OF IRON IN THE PRESENCE OF CARBON DIOXIDE
AND AIR AND THE INFLUENCE OF ELECTRICAL
POTENTIALS ON SUCH RATESANSON HAYES, E. LEE HENDERSON, C. E. STANEART AND
G. H. BRODIE

The method consists in subjecting cylindrical samples of 4ft. by 1/10 ft. wrought iron to the action of water saturated with the gas mixture. The water and gas are passed through the cell at such a rate as to insure a constant and known composition. A

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