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Magnesia Crucibles in an Arc Furance

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MAGNESIA CRUCIBLES IN AN ARC FURNACE

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A satisfactory method for preparing pure magnesium oxide crucibles in an arc furnace has been worked out. Bakers C.P. MgO, so-called, is decarbonated by heating to 1200°F. for three hours, the CO_2 liberated being driven from the furnace by a slow current of air. The magnesia is next packed loosely in graphite containers and sintered in an arc furnace by heating to 3100°F and holding at that temperature for one hour. The sintered magnesia is then ground to pass a 100 mesh sieve, shaped into the desired form in graphite containers by packing dry around a graphite core. The core is removed, graphite lids are placed on the containers and the sintering repeated as above. The crucibles are of sufficient strength to allow pouring molten metal.

DETERMINATION OF THE COLLOIDAL MATERIAL IN SOILS

D. VERNE MOSES

Separation methods for the determination of colloidal material in soils have been eliminated by microscopic analysis, and proof of the existence of secondary reactions has cast doubt on many of the so-called adsorption methods. An adsorption method depending upon measurement of the partition coefficients for dye with alcohol and chloroform has been devised. The soil is saturated with dye from water, dried, extracted to equilibrum with chloroform, again dried and extracted with alcohol. The color in the alcohol is a measure of the colloidal surface. The method is simple and eliminates secondary reactions.

RELATION OF STARCH TO THE STRENGTH OF WHEAT FLOUR

G. G. NAUDAIN AND J. H. BUCHANAN

The condition of the starch of wheat flour is undoubtedly a factor that will indicate the strength of flour. A microscopical examination subsequently checked by baking tests shows that flour containing the larger proportion of small starch grains will be a stronger flour. A study of the action of various reagents shows the small grains to be more resistant. This may be indicated by the following studies: 1; by microscopically measuring the swell-