

CHEMISTRY

Chemical Prevents Mud

Newly developed resin compound which makes soil water-proof may end muddy streets and country roads. Has been successfully used on airplane fields.

► THE DEVELOPMENT of a chemical which may end muddy streets and country roads, and prove a timesaving aid in construction work where mud may cause delays, has been announced by the Hercules Powder Company. Designed to prevent mud by making soil water-proof, this resin compound has already been successfully used on roads, airplane landing fields and other construction projects in the United States and abroad, company officials report.

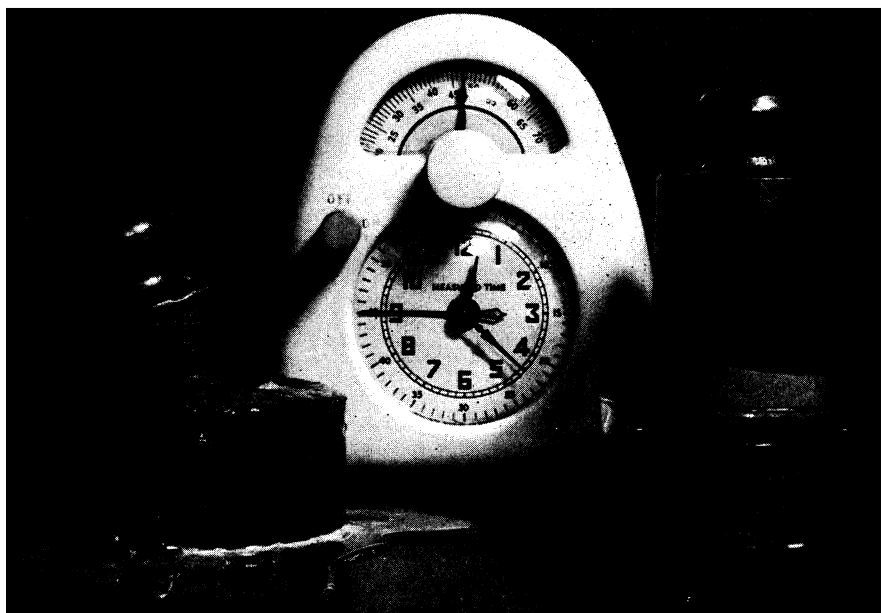
Areas treated with the resin compound may be used for construction traffic immediately after rain without danger of bogging down or rutting the surface, it is claimed. A car splashing through a puddle on a treated dirt road will kick up dry dust—not mud—behind it.

By mixing the resin compound, called

Stabinol, with the top few inches of soil, a water-proof surface is obtained. It will not allow the water to seep through the treated soil and turn it into mud, company officials explained. It also resists the rise of moisture from below by capillary action. The water either is drained off or evaporates.

The product is a combination of a specially treated resin and other chemicals in the form of a dry powder suitable for easy mixing with the soil. The treated soil looks just like the original dirt.

Only a small amount of the resin compound is required, usually about one per cent of the total soil to be treated, and the material itself is quite inexpensive, costing well under ten cents a pound. Although the amount varies with the composition of the soil, on the



PROPHECY—Country roads impassable after rainy weather because of muddy ruts may be made usable by application of a new chemical. The mud-preventive qualities of this resin compound, called Stabinol, are here graphically illustrated. At 12 noon two cores of soil were placed in dishes and water poured over them. Some minutes later one-kilogram weights were placed on the samples. The untreated core (left) immediately collapsed into ooze, but the stabilized core (right) supported the weight. Many treated cores will support the weight of a man after being submerged for long periods.

average about five pounds is needed per square yard. The soil stabilization will last for years, it is believed.

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CHEMISTRY

Yeast Cells May Be Used To Manufacture Biotin

► MICRO-ORGANISMS, already used to produce disease-fighting substances of which the most famous example is penicillin, may next be enlisted by scientists for manufacture of a vitamin chemical, biotin. This possibility is suggested in a report by Prof. Vincent du Vigneaud, Dr. Karl Dittmer and Dr. Donald B. Melville, of Cornell University Medical College. (*Science*, March 10).

Biotin is necessary for the growth of yeast and other microorganisms. Its role in human nutrition is not definitely known but once more ample supplies of the vitamin are available, this knowledge may be gained.

Synthesis of biotin in the laboratory has been achieved following elucidation of its structural formula by Prof. du Vigneaud and associates. More recently they have prepared from biotin another chemical, desthiobiotin, which also promotes the growth of yeast and some but not all the other microorganisms whose growth is promoted by biotin. In fact, at certain concentrations, desthiobiotin was found to have an anti-biotin effect for one such organism, *Lactobacillus casei*.

Growing yeast cells, they now report, can apparently convert desthiobiotin into biotin. Since desthiobiotin can be synthesized more easily than biotin in the laboratory, they suggest that yeast or some other microorganism which can convert larger amounts of desthiobiotin to biotin may be used for more easily obtaining supplies of biotin itself.

Science News Letter, March 25, 1944

MILITARY SCIENCE

Army Limits Use in U. S. Of 80-Octane Gasoline

► NEW gasoline conservation measures just adopted by the Army for all of its jeeps, trucks and other motor vehicles operated within continental United States, place definite limitations on the use of its 80-octane all-purpose, all-weather fuel. This high-power fuel will continue to be used in all combat vehicles in this country because their en-