

sistance Company—mounted in a hermetically sealed enclosure. The high resistivity of this film is such as to lend itself to the manufacture of megohm value resistors. Its composition is not disclosed.

For use in unsealed assemblies certain platinum alloys, 10 per cent rhodium-platinum, 10 per cent iridium-platinum and 11 per cent ruthenium-platinum, show great promise and further work on these has been initiated. These alloys compare extremely favourably with pure platinum in that they are far more stable and have lower temperature coefficients.

Iron-nickel caps with nickel leads were

employed for the fired-film resistors, these caps being pushed onto gold-platinum bands fired onto each end of the body. The caps oxidised at 500°C but did not cause a discernible increase in resistance. Gold or platinum leads were used with the evaporated films.

The best method of sealing the enclosures to the caps was found to be that of metallising the enclosures with a nickel-plated molybdenum-manganese band and brazing them to the caps with a silver-free brazing alloy. Silver is objectionable because of its tendency at high temperatures to penetrate the seals and evaporate.

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References

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A NEW NITRIC ACID PLANT

A high pressure ammonia oxidation unit with an output of 250 short tons of 100 per cent nitric acid per day forms part of the new ammonium nitrate factory recently built for Fisons Ltd. at Stanford-le-Hope on the Thames estuary. It employs a modification of the Du Pont process, and has been built under a contract placed with Chemical & Industrial International. Liquid ammonia from the neighbouring plant of the Shell Chemical Co. is stored in a 2,000 ton spherical tank. A 10 per cent mixture of ammonia in air at 120 lb. per square inch is pre-heated and passed through a pad of 36 hexagonal 10 per cent rhodium-platinum gauzes, 36 inches across flats, at a temperature of 950°C. After cooling, the nitrogen oxides are absorbed in a single stainless steel bubble-cap tower. The tail gases are treated in a fume eliminator containing a platinum catalyst and are then expanded through a gas turbine. All the power for the compressor is provided by gas and steam turbines on a common shaft which utilise heat derived from the process reactions.

