SOUND TALK

FROM THE MAKERS OF "SCOTCH" BRAND MAGNETIC TAPE

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MAGNETIC PROPERTIES OF "SCOTCH" BRAND TAPE COATINGS

The graphs on the reverse page show typical hysteresis loops and magnetization curves for the various coatings used in the following magnetic recording tape "SCOTCH" Brand products:

Type A

#100 Tape (obsolete)
R1519 Sprayable Dispersion

Type B

#101 Tape (RBB)
#103 Tape
#104 Tape
#111 Tape (4RBA)
#114 Tape
#115 Tape
#116 Tape
#117 Tape
RO3010 Sprayable Dispersion

Type BQ

#101 Tape (2RBB)
#109 (RBE)
#111 A Tape (5RBA)
#111 AP (6RBA)

Type RR

#112 Tape (obsolete)

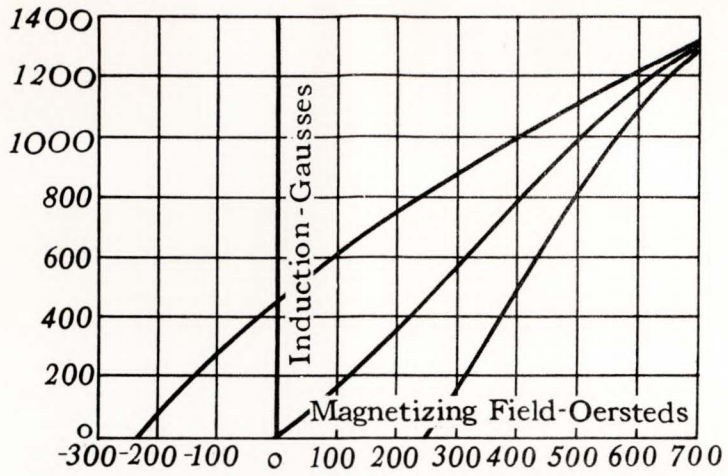
These curves should be of particular interest to design engineers and experimentors who may require such data for predicting the performance of recording devices. From them it is possible to determine the field intensities necessary to magnetize the tape, and the amount of resulting magnetic flux. Also, the permeability of the coatings for any given recording conditions can be estimated by referring to the slope of the curve at the particular point in question.

It must be borne in mind that while magnetic performance under static conditions is rather easily calculated, the behavior of magnetic materials under dynamic conditions such as exist in most recording processes is exceedingly complex. Therefore, it is usually not possible to predict accurately the performance of practical recording devices using only these curves.

The curves were derived from data taken with a 60 cycle dynamic B-H meter. The maximum field intensity represented by the major hysteresis loop is 1000 oersteds peak. In all cases the tape materials are essentially saturated in this field. The magnetization curve was obtained by plotting the peak induction of various unsaturated symmetrical loops against the value of the peak field for each loop. The values of induction obtained from the B-H meter were in units of lines of flux contributed by the ferromagnetic material only. These values were then converted to true flux density by the relationship $B = \frac{\Phi}{A} + H$, and the converted values are the ones used in the curves.

These curves are typical of the various tape coatings represented. Actual samples may differ from these values somewhat because of manufacturing tolerances.

Magnetic Products Division 3M COMPANY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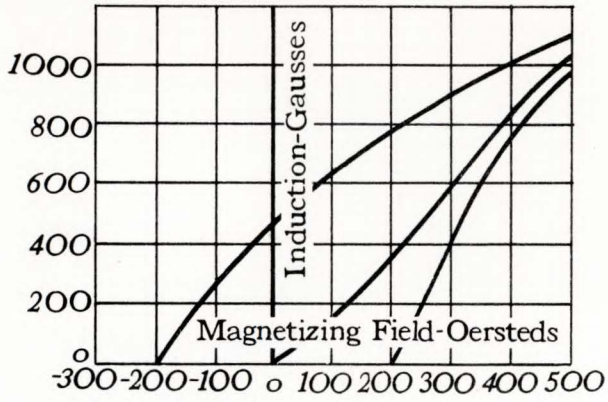
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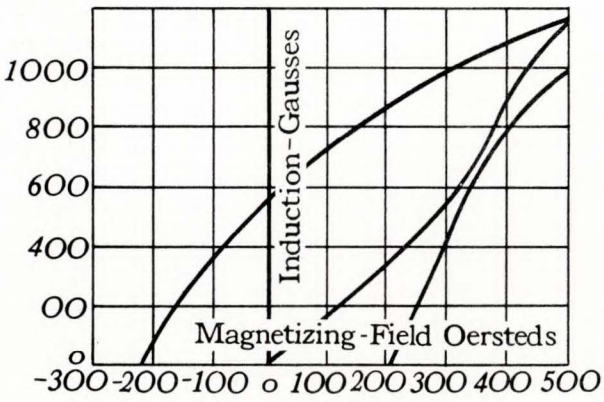
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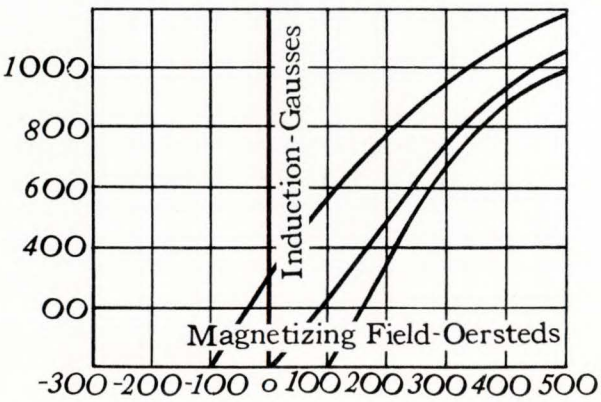
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