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COMPILATION OF THE DIELECTRIC PROPERTIES OF BODY TISSUES AT RF AND MICROWAVE FREQUENCIES

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13. ABSTRACT (Maximum 200 words)
Knowledge of the dielectric properties of biological materials is of importance in solving electromagnetic interaction problems. There is, as yet, no consensus on such data among scientists dealing with these issues. This project is geared towards producing a database of dielectric data based on measurements using recently developed techniques. This has been achieved through measurement over a wide frequency range. The new data were evaluated by comparison with corresoonding data from the literature where available. To facilitate the incorporation of the dielectric data in numerical solutions, their frequency dependence was modelled to a spectrum characterised by 4 dispersion regions. The conductivity of tissues below 100 Hz was estimated from the recent measurements mitigated by data from the literature and used to estimate the [illegible] of the whole body and of various body parts.

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14. SUBJECT TERMS
Dielectric properties, Permittivity; Conductivity; Biological materials; Literature review; Experimental techniques; modelling for frequency dependence; Conductivity of body parts.

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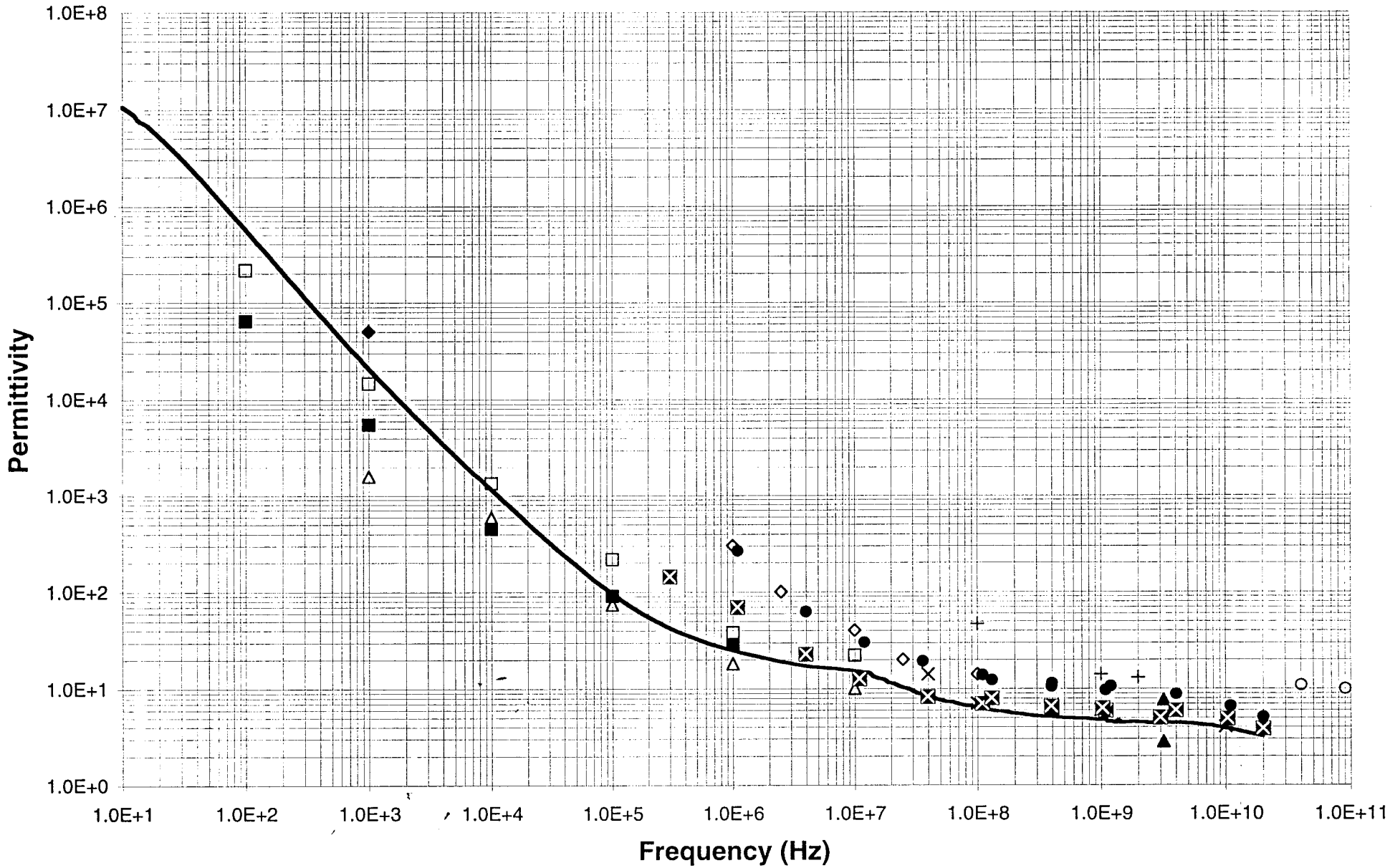
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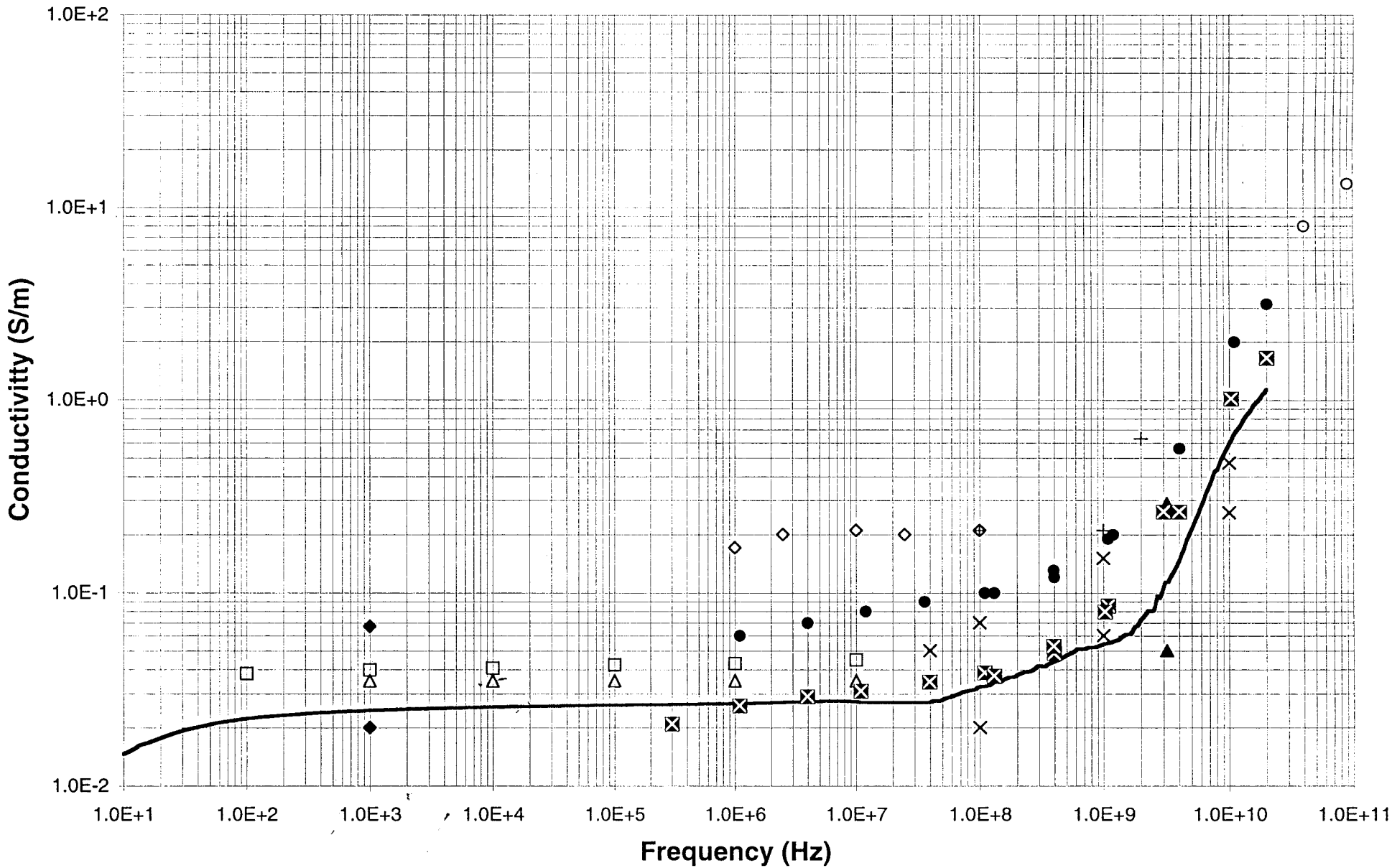
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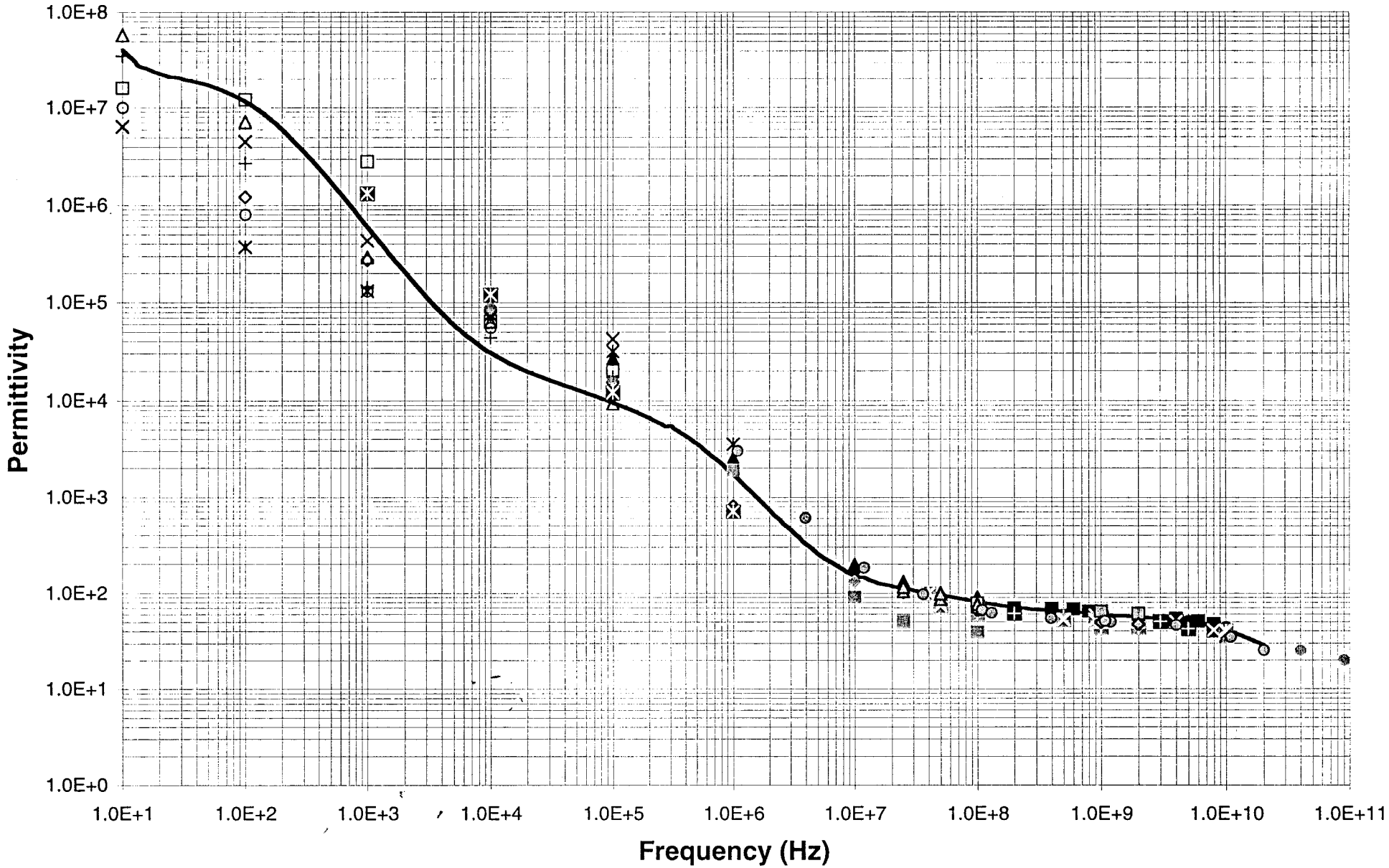
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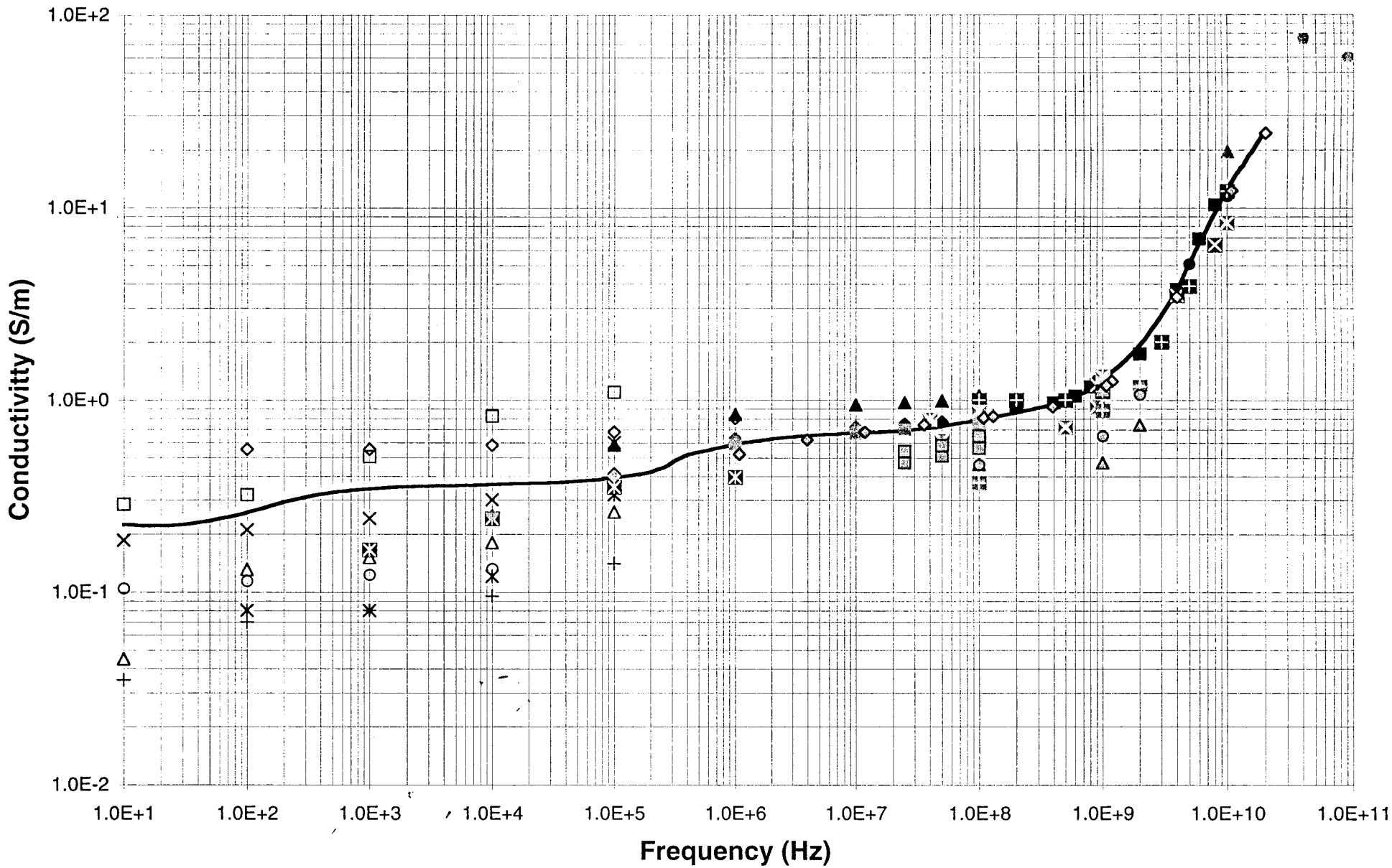
Muscle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