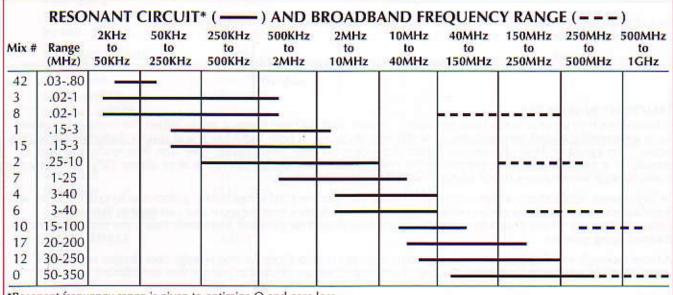
GENERAL MATERIAL PROPERTIES FOR RF MATERIALS Material Basic Material Temperature¹ Relative Toroidal Iron powder Stability Mix No. Permeability Cost Color Code (+ppm/C°) (μ_0) Carbonyl C Blue/Clear -1 20 280 2.7 -2 Carbonyl E 10 95 1.7 Red/Clear -3 Carbonyl HP 370 35 2.5 Gray/Clear Carbonyl J 9.0 -4 280 2.0 Blue/White Carbonyl SF 8.5 35 2.0 Yellow/Clear -6 -7 Carbonyl TH 9.0 30 2.0 White/Clear -8 Carbonyl GQ4 255 2.5 Orange/Clear 35 -10 Carbonyl W 6.0 150 4.7 Black/Clear -12* Synthetic Oxide 4.0 170** 1.5 Green/White Carbonyl GS6 Red/White -15 25 190 3.1 Carbonyl Blue/Yellow -17 4.0 50 3.1 -42 Hydrogen Reduced 550 Blue/Red 40 1.4 Phenolic -0 0 1.0 Tan/Tan

^{**} Mix 17 was developed as a temperature stable alternative to mix 12 and is recommended for all new designs. Note: For information an Mix #'s 8, 14, 18, 26, 30, 34, 35, 38, 40, 45 and 52 see Micrometals Catalog for Power Conversion and Line Filter Applications.



Resonant frequency range is given to optimize Q and core loss. Materials can be used outside resonant frequency range where optimum Q is not required.

TYPICAL APPLICATIONS

- -2, -4, -6, -7 Materials: These are the most popular carbonyl irons. They will provide high Q up to 40 MHz and are the most popular materials for amateur radio and a variety of other communication applications. They are also useful for moderate band transformers in the 200 to 400 MHz frequency range.
- -1, -3, -8, -15 Materials: These materials are annealed carbonyl irons providing the highest carbonyl permeability. They are useful for high Q applications below 1 MHz, They will provide the broadest band transformers covering a typical range from 50 to 500 MHz.
- -10, -17 Materials: These materials are the highest frequency carbonyl irons. The will provide high Q up to 150 MHz and are a popular material for cable television applications. They will produce moderate band transformers typically covering 400 to 700 MHz.
- -0 Material: This is a non-magnetic material. It provides a solid form for winding air coils. It has excellent temperature stability and will provide high Q up to the highest frequencies. It is also useful for moderate band transformer applications covering a typical range from 600 to 1000 MHz.

¹Temperature stability values, averaged from -55°C to +125°C, are listed for closed magnetic structures.

Non-linear