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AEROSPACE MATERIAL SPECIFICATION

AMS 3781

Issued 1-15-63
Revised 10-1-84

COPPER WIRE, MAGNET Single Film Insulated, High Temperature

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 10-2-75. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the original issue of the subject specification.

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of 1-15-81. By this action, subject specification number and title will be deleted from the active specification index of Aerospace Material Specifications.

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AEROSPACE MATERIAL

Society of Automotive Engineers, Inc.

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SPECIFICATION

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Revised

COPPER WIRE, MAGNET Single Film Insulated, High Temperature

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for winding various types of coils used in total conductor temperatures up to 450 F (230 C) in continuous service. After winding of coils, this wire should be annealed at 300 F (150 C) for 1/2 hr to prevent crazing of film when exposed to solvent washes or impregnants.
3. **CONSTRUCTION:**
 - 3.1 **Conductors:** Commercially pure, annealed copper, uniform in cross-section and free from flaws, scale, and other defects. Splices shall be of the butt joint type and finished so as not to increase the diameter at that point. Splices shall not occur closer than 1000 feet. Tensile strength of joints shall not be less than 95% of original material.
 - 3.2 **Insulation:** High temperature aromatic polyamide-imide resin film of uniform thickness so applied as to provide adequate centering of the conductor and retention of a circular cross section. The insulation shall be free from blisters, wrinkles, cracks, and other defects.
4. **DIMENSIONS:**

AWG SIZE	Diameter, Bare, Inch			Increase in Diameter Due to Insulation, Inch	
	Min	Nominal	Max	Min	Max
8	0.1272	0.1285	0.1298	0.0016	0.0026
9	0.1133	0.1144	0.1155	0.0016	0.0026
10	0.1009	0.1019	0.1029	0.0015	0.0025
11	0.0898	0.0907	0.0916	0.0015	0.0025
12	0.0800	0.0808	0.0816	0.0014	0.0024
13	0.0713	0.0720	0.0727	0.0014	0.0023
14	0.0635	0.0641	0.0647	0.0014	0.0023
15	0.0565	0.0571	0.0577	0.0013	0.0022
16	0.0503	0.0508	0.0513	0.0012	0.0021
17	0.0448	0.0453	0.0458	0.0012	0.0020
18	0.0399	0.0403	0.0407	0.0011	0.0019
19	0.0355	0.0359	0.0363	0.0011	0.0019
20	0.0317	0.0320	0.0323	0.0010	0.0018
21	0.0282	0.0285	0.0288	0.0010	0.0018
22	0.0250	0.0253	0.0256	0.0010	0.0017
23	0.0224	0.0226	0.0228	0.0009	0.0016
24	0.0199	0.0201	0.0203	0.0009	0.0015
25	0.0177	0.0179	0.0181	0.0009	0.0014