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EMD 432-1-C

MATERIALS MANUAL

INDEX NO. 0514

| FIRST ISSUED | | SPECIFICATION NO. |
|---|---|---|
| 11-23-81<br>R. A. Schwarze | MATERIAL SPECIFICATION | EMS - 886 |
| APPROVED | ELECTRO-MOTIVE DIVISION<br>GENERAL MOTORS CORPORATION<br>LA GRANGE, ILLINOIS | REV. A / DATE 5-14-86 / BY Schwar |

NAME-- SILVER BRAZING ALLOY - LOW TEMPERATURE

REQUIREMENTS:

1. Standards and Practices: As appear in AWS A5.8-76** for classifications BCuP-3 and BCuP-4.
2. Chemical Composition:

| | Type 1 (BCuP-3) | Type 2 (BCuP-4) |
|---|---|---|
| Silver, % | 4.8 - 5.2 | 5.8 - 6.2 |
| Phosphorus | 5.8 - 6.2 | 7.0 - 7.5 |
| Other elements, total | 0.15 max. | 0.15 max. |
| Copper | Balance | Balance |

3. Shape: Wire form to be square or rectangular, unless otherwise specified on the engineering drawing.
4. Identification: Each spool of wire shall be marked with the EMS number, Type number and nominal silver content (%). Rod material shall be stamped with the nominal silver content.

**NOTE: Wherever the specification or test of any society is referred to herein with its date number or revision letter stated, no other dated or more recent revisions are acceptable except by revision of this Electro-Motive Specification.

GENERAL INFORMATION:

EMS 886 covers two types of filler metals for brazing copper and copper base alloys. These materials are self-fluxing when used on copper, but all other applications should be fluxed with EMS 870. Recommended joint clearances are 0.001 in. to 0.005 in. for Type 1 and 0.001 in. to 0.003 in. for Type 2. This material has good thermal and electrical conductivity. Its first use at EMD was for brazing traction motor pinion end connectors.

EMS 886 may also be used on silver, tungsten and molybdenum. It should not be used on ferrous metals or on alloys containing more than 10% nickel.

Brazing Characteristics:

| | Solidus | Liquidus | Brazing Temperature Range |
|---|---|---|---|
| Type 1 | 1190°F | 1495°F | 1325-1500°F |
| Type 2 | 1190°F | 1325°F | 1275-1450°F |

Standard Forms and Sizes - (square, rectangular or round section):

| | |
|---|---|
| Wire in coils and on spools (thickness, width or diameter) | 3/64-1/8" |
| Rod (thickness, width or diameter) | 1/16-1/4" |
| (lengths) | 18,20 or 36" |

DRAFTING INFORMATION:

Where use of this material is specified it shall be designated as:

"A" MATERIAL: EMS 886 BRAZING ALLOY, TYPE _____.

Assembly drawings specifying this material (other than copper assemblies) shall carry the following note:

"FLUX WITH EMS 870 BRAZING FLUX".

GENERAL MOTORS CORPORATION
LA GRANGE, ILLINOIS

# MATERIAL SPECIFICATION

ELECTRO-MOTIVE DIVISION

SPECIFICATION NO.
EMS - 886
Rev.A 5-14-86
(CONTINUED)

NOTE: These specifications were developed without considering whether patents may or may not be involved. In all cases, therefore, the supplier shall be required to assume patent liability.