GM	WORLDWIDE ENGINEERING STANDARDS	**Material Specification**	**GMW16939**

Wire, Filler, Welding and Brazing

1 Scope

1.1 Material Description. This standard covers the requirements of weld filler metal also referred to as welding wire used in Body-in-White welding and brazing operations.

1.2 Symbols. Not applicable

1.3 Applicability. This standard applies to the following welding and brazing processes; MIG welding with a solid wire electrode (MIG), MAG welding with a solid wire electrode (MAG), gas metal arc brazing (ABW), gas tungsten arc braze welding (GTABW), plasma arc weld brazing (PABW), laser beam braze welding (LBBW), and laser welding with a solid wire electrode (LBW).

1.3.1 Usage. Selection of weld and braze filler wire shall be in agreement with the regional welding wires identified for usage with the specified weld or braze process (see Table 1 through Table 5).

1.4 Remarks. For clarification of this standard or editorial comments, email the GM Global Weld Council at: **weld.council@gm.com**.

Proposed changes to this standard must be presented to the Global Weld Council. To suggest a change to this standard, reference the "Procedure for Weld Standard Changes" on the Global Weld Council's web page.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

AS/NZS 2717.1	AWS A5.10	DIN EN ISO 14341	ISO 4063
AWS A5.7	AWS A5.18	DIN EN ISO 24373	

2.2 GM Standards/Specifications.

GMW3059

3 Requirements

3.1 General Requirements. Table 1 through Table 5 contain the identification of the applicable specifications and weld wire classification for standard filler metals by GM region for each Welding and Brazing application.

3.2 Material Specifications. The welding wire shall meet the requirements of the listed American Welding Society (AWS) or German Institute for Standardization (DIN) specifications.

3.3 All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

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Table 1: Standard Filler Metals Used for Welding and Brazing in GM North America

Process Description	Process Reference Classification	Filler Metal Used (Steel Applications)	Filler Metal Used (Aluminum Applications)
MIG welding with a solid wire electrode (GMAW)	MIG/GMAW (ISO 4063 - 131)	AWS A5.18/ER70S-3 AWS A5.18/ER70S-6	AWS A5.10/ER5554
MAG welding with a solid wire electrode (GMAW)	MAG/GMAW (ISO 4063 - 135)	AWS A5.18/ER70S-3 AWS A5.18/ER70S-6	-
Gas metal arc brazing	GMABW/ABW (ISO 4063 - 983)	AWS A5.7/ERCuSi-A	-
Gas tungsten arc braze welding	GTABW (ISO 4063 - 984)	DIN EN ISO 24373 S Cu Z (CuSn6MnSi)	-
Plasma arc braze welding	PABW (ISO 4063 - 985)	AWS A5.7/ERCuSi-A	-
Laser braze welding	LBBW (ISO 4063 - 986)	AWS A5.7/ERCuSi-A	-
Laser beam welding with a solid wire electrode	LBW [Note 1] (ISO 4063 - 52)	-	AWS A5.10/ER4047

Note 1: GMW16939 applies only when filler wire is specified.

Table 2: Standard Filler Metals Used for Welding and Brazing in GM Opel/Vauxhall (O/V)

Process Description	Process Reference Classification	Filler Metal Used (Steel Applications)	Filler Metal Used (Aluminum Applications)
MIG welding with a solid wire electrode (GMAW)	MIG/GMAW (ISO 4063 - 131)	DIN EN ISO 14341 G 46 3 M21 4Si1 G 42 3 M21 3Si1	-
MAG welding with a solid wire electrode (GMAW)	MAG/GMAW (ISO 4063 - 135)	DIN EN ISO 14341 G 46 3 M21 4Si1 G 42 3 M21 3Si1	-
Gas metal arc brazing	GMABW/ABW (ISO 4063 - 983)	DIN EN ISO 24373 S Cu 6560 (CuSi3Mn1)	-
Gas tungsten arc braze welding	GTABW (ISO 4063 - 984)	DIN EN ISO 24373 S Cu Z (CuSn6MnSi)	-
Plasma arc braze welding	PABW (ISO 4063 - 985)	DIN EN ISO 24373 S Cu 6560 (CuSi3Mn1)	-
Laser braze welding	LBBW (ISO 4063 - 986)	DIN EN ISO 24373 S Cu 6560 (CuSi3Mn1)	-

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