

**MERITOR**2135 West Maple Road
Troy, MI 48084-7121

Material Specification

Specification: B-222-6

Revision Date: 07/03/2014

Revision Level: F

ALLOY STEEL - CARBURIZING GRADE- SAE 4122 MOD

- 1.0 GENERAL SPECIFICATION: Material Specification B-1. All the requirements for the general specifications apply unless superseded by the requirements within this specification.
- 2.0 SCOPE: This specification covers a high grade alloy steel suitable for use in the manufacture of gearing and other carburized parts.
- 3.0 CHEMISTRY:

Chemical Property	Range (wt.%)
Carbon	0.19-0.24
Manganese	0.80-1.20
Silicon	0.10-0.30
Chromium	0.30-0.60
Molybdenum	0.13-0.20
Phosphorus	0.035 max
Sulfur*	0.025-0.040

* The material must still meet the inclusion ratings specified per B-1. Aim sulfur 0.028-0.040% (Per Meritor Specification B-1, "AIM" requires 90% of heats to meet 0.028-0.040%); this is to aid in machinability.

- 4.0 HARDENABILITY: Hardenability shall be restricted to the following limits and calculated per SAE J406 (2009).

Jominy Distances (1/16 th inch)	J4	J8	J12
HRC MIN	34	22	19
HRC MAX	40	28	25

- 5.0 REFERENCE SPECIFICATIONS:

Industry Affiliation	Standard Number and revision Date	Title of Standard
Meritor	B-1	General Wrought Steel Standard
SAE	J406 (2009)	Methods of Determining Hardenability of Steels.

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Date	Change
7/03/2014 Level F Request 30272-181	Section 3.0 Chemistry Changed sulfur; was 0.028-0.020. Also clarifying Level E update to reflect the method for calculation of J positions is listed, not added.
5/19/2014 Level E Request 30272-179	Reformatted and updated the Header / Footer. Added clarifying sentence to General Specification section. Tabularized Chemistry and hardenability section. Added method for calculation of J positions. Added Reference Specification section.
11/5/2008 Level D Request 30272-101	Added (1/16 inch) to Jominy Distance
11/05/2006 Level C Request 25793-24	- Sulfur aim was 0.028-0.034%
10/12/2006 Level B Request 26417-3	-Changed sulfur from 0.028-0.040% to 0.025-0.040% -Added (Per MS B1, "AIM" requires 90% of heats to meet 0.028-0.034%)
10/05/2006 Level A Request 26417-2	Issued

Approved By: S. Doyle
Director - Materials Engineering

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