



Copper-Free Brake Initiative:

Brake Manufacturers' Road to Compliance

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY
BRAKE FRICTION MATERIALS ADVISORY COMMITTEE CONFERENCE CALL

19 SEPTEMBER 2016

About MEMA & BMC



- The Motor & Equipment Manufacturers Association (MEMA) is a trade association that represents motor vehicle component and systems suppliers.
- Suppliers are the largest employers of manufacturing jobs in the U.S. directly employing over 734,000 Americans with a total employment impact of 3.6 million jobs.
- MEMA represents vehicle suppliers through the following four divisions:
 - Automotive Aftermarket Suppliers Assn. (AASA)
 - Original Equipment Suppliers Assn. (OESA)
 - Heavy Duty Manufacturers Assn. (HDMA)
 - Motor & Equipment Remanufacturers Assn. (MERA)
- The Brake Manufacturers Council (BMC) is a product council of AASA/MEMA
- BMC members are primarily manufacturers of new automotive and light truck brake components and brake friction materials. Other BMC members include testing and quality control companies.
- BMC and MEMA work together to advocate on behalf of its members related to legislation and regulations impacting brakes, brake friction materials and related components.



BMC Urges WA Dept. of Ecology to Stay On Time and On Track



“... the committee shall separately assess alternative brake friction material ... shall make recommendations ... as to whether alternative brake friction material is available or unavailable...” and “... to consider appropriate exemptions ...”

- ▶ WA Ecology’s should complete its statutory tasks vis-à-vis the Brake Friction Materials Advisory Committee as planned, in 2016
 - ▶ The Committee should only address topics that are required by statute
 - ▶ Doing so aids in aligning WA with the State of CA “N” level of compliance for Copper (0.5 wt%) by the Year 2025
- ▶ MEMA, BMC, and other industry stakeholders, do not see a need for the committee to delay its work

Phasing Out Copper in Brake Friction Materials

(a.k.a. brake pads or brake linings)



- ▶ Brake friction materials are composite products made up of many different elements and materials
 - ▶ Copper has been used in brake linings for various functions such as reduced fading, improved friction properties, thermal conductivity, and increased durability
- ▶ Debris from brakes identified as a source of pollutants in storm water runoff
 - ▶ Reducing / eliminating copper from brake pads has the potential to reduce the environmental exposure
 - ▶ Legislation in WA and CA require manufacturers of brake friction materials to phase out the use of copper as well as prohibits the sale of materials not in compliance with their respective laws

Industry Response



	SURFACE VEHICLE RECOMMENDED PRACTICE	J2975	MAY2015
		Issued	2011-12
		Revised	2015-05
		Superseding J2975 DEC2013	
Measurement of Copper and Other Elements in Brake Friction Materials			

- ▶ BMC members have dedicated **significant resources and capital** to reformulate, test, certify and register new compliant brake friction materials
 - ▶ In the first half of 2016, over 6,554 product identities have been registered in the State of WA; all BMC members that manufacture friction products are among the 117 companies who registered their products thus far
 - ▶ BMC developed a registered trademark (**LeafMark™**) for product package compliance marking
- ▶ SAE International, of which many BMC representatives are members, proactively worked on **industry standards** (J866) and test methods (J2975) to support compliance

Industry Response



MEMORANDUM OF UNDERSTANDING
ON
COPPER MITIGATION IN WATERSHEDS AND WATERWAYS
BETWEEN
U.S. ENVIRONMENTAL PROTECTION AGENCY
AND
MOTOR & EQUIPMENT MANUFACTURERS ASSOCIATION, AUTOMOTIVE
AFTERMARKET SUPPLIERS ASSOCIATION, BRAKE MANUFACTURERS COUNCIL, and
HEAVY DUTY MANUFACTURERS ASSOCIATION
AND
AUTO CARE ASSOCIATION
AND
ALLIANCE OF AUTOMOBILE MANUFACTURERS
AND
ASSOCIATION OF GLOBAL AUTOMAKERS, INC.
AND
TRUCK AND ENGINE MANUFACTURERS ASSOCIATION
AND
ENVIRONMENTAL COUNCIL OF THE STATES



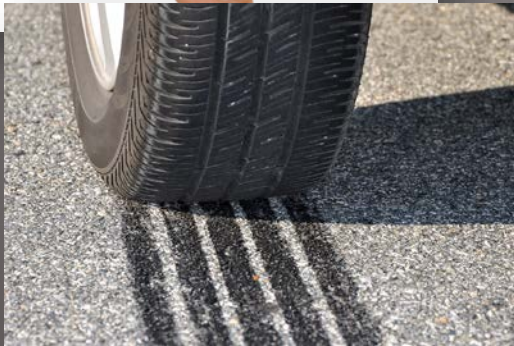
I. Purpose and Intent

A. The purpose of this memorandum of understanding (MOU) between the U.S. Environmental Protection Agency (EPA), Environmental Council of the States (ECOS), vehicle industry signatories, Motor and Equipment Manufacturers Association (MEMA), Automotive Aftermarket Suppliers Association (AASA), Brake Manufacturers Council (BMC), Heavy Duty Manufacturers Association (HDMA), Auto Care Association, Alliance of Automobile Manufacturers (Alliance), Association of Global Automakers, Inc. (AGIA), Automakers and Truck and Engine Manufacturers Association (ATEMA) is to reduce heavy metals and other pollutants in stormwater runoff from roads and highways by promoting and facilitating the phase out (consistent with the terms of this MOU) of copper, cadmium, zinc, cobalt, and its compounds, chromium (VI)-oxide, lead and its compounds, and mercury and its compounds (copper and other constituents) in motor vehicle brake friction materials, also called brake pads. Debris from brake pads are one source of these pollutants in stormwater discharges, and reducing or eliminating the use of these compounds at the source has the potential to reduce environmental exposure of these materials in watersheds and waterways. This effort will be called the Copper-Free Brake Initiative.

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- ▶ MEMA and BMC have been, and remain, **actively engaged** on legislative and regulatory measures that seek to eliminate copper (and other constituents) from brakes
- ▶ In 2015, MEMA and BMC led a coalition of industry stakeholders to agree to a **nationally focused, voluntary MOU** commitment with U.S. EPA and ECOS
- ▶ The MOU facilitates copper phase out in brake linings **modeled on CA and WA** laws
- ▶ Industry education website **copperfreebrakes.org**

Product Development Considerations



Brake manufacturers have several considerations when making product changes, such as:

- ❑ **SAFETY:** reformulated products must be tested, validated and verified to ensure no impact on brake safety
- ❑ **PERFORMANCE:** reformulated products need to have same/similar performance characteristics to meet customer satisfaction and specifications
- ❑ **TIME & SCOPE:** reformulations for a wide variety of service applications and product lines may be phased in over time and will vary by manufacturer
- ❑ **COST:** replacement materials can be potentially cost-prohibitive for customers; engineering/design and validation.

The Road to Compliance



BMC Brake Manufacturers Are:

- ✓ Expending significant resources on research and product development
- ✓ Reformulating brake pads with alternatives to copper
- ✓ Meeting "A" level 2014/2015 (Asbestos, Cr(VI), Pb, Hg, Cd)
- ✓ Producing early compliant brake pads "B" and "N" levels
- ✓ Tracking towards compliance target years of:
 - ✓ 2021, Copper <5.0 wt% (WA & CA law)
 - ✓ 2025, Copper <0.5 wt% (CA law)
- ✓ Making reformulated products available nationwide

WA Exemptions



- ▶ BMC manufacturers create and produce brake friction materials for ALL vehicle applications/classes light-, medium-, and heavy-duty
- ▶ Current exemptions are appropriate
 - ▶ WAC 173-901-140 provides an appropriate process for exemption applications to address any future, unforeseen feasibility challenges

Summary

BMC urges Ecology to stay on track and to issue its report to the legislature in 2016

▶ Alternatives to Copper Exist

- ▶ Product line conversions to low/no Cu in brake friction formulations are being phased-in over time
- ▶ Brake Manufacturers on track to meet compliance requirements for <5.0% Cu in 2021 and <0.5% Cu in 2025
- ▶ Early compliant "B" and "N" level products are available, as evidenced by the registrations in the State of Washington
- ▶ Manufacturers are continuously vetting and validating reformulated products to ensure continuity of performance and safety characteristics

▶ Exemptions are Adequate

- ▶ However, any unforeseen feasibility issues can be addressed under WA law's exemptions application process

Thank you!
Questions?

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