

SB 346 and Copper Compliance for Stormwater Permittees

A California law enacted in 2010, SB 346 (Kehoe) set in place a program that will nearly eliminate copper use in brake pads. This law grew out of a unique collaboration among brake pad manufacturers, government agencies, and environmental groups called the "Brake Pad Partnership," which was initiated by California municipalities and strongly supported by CASQA. Enacting SB 346 into law was truly a landmark event for California municipalities, which stand to save from \$50 to \$100 billion in copper-related Clean Water Act compliance costs over the next 30 to 40 years.

Importance of Brake Pad Copper Regulation

A simple action—vehicle drivers hitting the brakes—released about 1.3 million pounds of copper into California's environment in 2010. Each time vehicle brakes engage, a tiny amount of fine dust wears off of the vehicle's brake pads. When it rains, this dust washes into storm drains, which drain directly to creeks, rivers, and marine waters without any wastewater treatment. Scientific studies indicate that dust generated by vehicle brakes is by far the most significant source of copper in urban watersheds.

Copper is a major pollutant of concern for stormwater management agencies. Copper is one of the pollutants in stormwater that most often exceeds water quality standards at the point of discharge. Copper is also a common water pollution problem in California's waterways; in 2010, the State Water Board identified copper

as causing impairment in 83 California waterways. California Water Boards have adopted 18 copper Total Maximum Daily Loads (TMDLs), primarily in Southern California.

Copper in Brake Pads

Copper is in most, but not all, brake pads. Although copper is not necessary for braking safety, it provides other desirable properties. For example, it helps brakes remain effective through extended braking events and can be used to prevent annoying squealing and shuddering.

Brake pads with low or no copper are sold today and safely stop cars. Due to the current lack of copper content labels, no one—not even experienced mechanics—can readily determine brake pad copper content. In general, "semi-metallic" brake pads have the least copper; "organic" brake pads have the most copper. Starting in 2014, a brake pad labeling system established by SB 346 will provide for ready identification of brake pads with the lowest copper content.

Provisions of SB 346

SB 346 requires that brake pads sold in California contain no more than 5% copper by weight by 2021, and no more than 0.5% by 2025. According to a representative industry analysis, as of 2006 brake pads contained an average of about 8% copper by weight. The law also limits dangerous—but fortunately less common—brake pad pollutants, by prohibiting sale of brake pads containing more than trace amounts of lead, mercury, asbestos, cadmium, and hexavalent chromium in 2014. To avoid replacing one environmental problem with another, SB 346 requires manufacturers to examine new formulations carefully and to select alternatives that pose less potential hazard to public health and the environment. Consumer safety will be ensured through a limited deadline extension process (available starting only when



Californians hit the brakes billions of times each year



Copper disrupts salmonids' sensory capabilities, making it difficult for them to avoid predators or find their way back to their spawning grounds



Which of these brake pads contain copper?



Fact Sheet

Water Quality Protection for all of North America

Due to the size of California's vehicle market, brake pad manufacturers expect that California's requirements will change the entire North American brake pad market. Nonetheless, other states are seeking to ensure their water quality will also be protected. The State of Washington enacted restrictions on brake pad copper content in 2010. Legislation is pending in several other states.

a manufacturer demonstrates that no alternative brake friction materials will be safe and available) and by provisions allowing continued sales of replacement brake pads for older vehicles.

California's Department of Toxic Substances Control (DTSC) will enforce SB 346. DTSC is working with manufacturers and other states to establish nationally accepted criteria for certifying that new brake pads comply with its requirements and to design the compliance markings that will be on every brake pad.

What SB 346 Means for Stormwater Copper Compliance

CASQA pressed for a "true source control" solution to the brake pad copper problem recognizing that attempting to treat runoff to remove brake pad copper would have been costly and unsuccessful. Treating stormwater runoff to remove copper is technically and financially challenging because expensive land-intensive infiltration-type treatment systems are the only measures capable of removing enough copper to meet water quality standards. Since brake pads appear in all developed areas, treatment of runoff from all land uses would have been required, entailing re-plumbing of entire storm drain systems and buying creek and ocean front land for treatment facilities, which would have disrupted established communities

and ecosystems. The relatively small investment that CASQA and its members made in brake pad source control avoided billions of dollars in treatment cost. The Brake Pad Partnership's proactive problem-solving approach ensured that the solution was acceptable to the environmental community and state and Federal regulators.

A near phase-out of copper use in brake pads is essential for many California municipalities and private businesses to comply with NDPES permits, especially permits that implement copper Total Maximum Daily Loads. In highly urbanized watersheds, urban runoff copper levels will exceed required concentrations until most vehicles have installed brake pads containing less than 0.5% copper.

The copper reduction time frames in SB 346 are inconsistent with some adopted copper TMDLs. In addition to providing assistance to members that are working with regulators to address inconsistencies, CASQA plans to examine the potential for the vehicle industry to achieve brake pad copper reductions ahead of required timeframes. Once the low copper brake pad labeling system is in place, options include various voluntary programs, such as preferences for low-copper brake pads in purchasing specifications.

Most municipalities will need to control one or more other copper sources to ensure compliance. Copper sources that may need to be addressed through local actions and/or partnerships with other regulators include:

- » Local copper emitting industries (e.g., boatyards, smelters)
- » Architectural copper (controls like coatings or on-site treatment systems)
- » Swimming pool, spa and fountain discharges (discharge management)

The enactment of SB 346 into law was the first major accomplishment of CASQA's Source Control Initiative. Like brake pad copper, many other pollutants are candidates for "true source control," which is an alternative, cost-saving compliance strategy.

CASQA's goal is for the market to shift quickly to brakes with <0.5% copper, the level essential for compliance.



Copper content markings should be similar to these current brake pad "edge codes"



Municipalities may need to require controls on copper roofs

www.casqa.org

Photo by: TDC Environmental, LLC