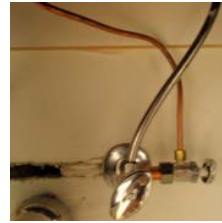




Lead in Plumbing



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Introduction

Lead from plumbing products may be leaching into drinking water. The amount of lead in drinking water depends on a number of factors, such as how much lead is in the plumbing parts, how large an area of a lead-containing part comes into contact with the water, how long the water is in contact with the lead-containing surface, and how corrosive the water is. Lead can be toxic to humans. Exposure to lead can cause serious adverse health effects, including delays in physical and mental development. Recently, the California Legislature passed laws to increase protection of the public from exposure to lead in drinking water. This was done by reducing the amount of lead allowed in plumbing components. The intent of this legislation is to reduce the lead content in plumbing components intended to convey or dispense water for human consumption. DTSC's [fact sheet](#) (January 2009) provides detailed information on this issue. The test protocols provided in DTSC's [fact sheet](#) (August 2009) are designed for DTSC to assess the "lead-free" compliance of individual product samples acquired from locations that are readily accessible to the public at either retail or wholesale sources.

Recent Legislation

California Senate Bills 1334 and 1395 amended [Health and Safety Code \(HSC\) Section 116875](#) and added [HSC Section 25214.4.3](#) regarding requirements for lead in plumbing. These laws require DTSC to coordinate with the State Department of Public Health (DPH) to evaluate the compliance of "lead-free" plumbing materials, in order to protect the public from exposure to lead in drinking water.

DTSC's Role

DTSC's role in implementing this legislation is:

1. Evaluating and selecting reliable and adequate test methods, protocols and sample preparation

procedures;

2. Coordinating with the plumbing manufacturing industry and providing information on testing protocols;
3. Annually testing, to the extent that resource are available, up to 75 faucet, fitting, and fixtures samples to determine compliance with "lead-free" standards;
4. Posting the testing results on DTSC's Web site and transmitting them to DPH; and
5. Coordinating with DPH on regulatory issues.

Regulatory Background

Federal law -- [Section 1417 of the Safe Drinking Water Act \(SDWA\) \[Section 300g-6 of 42 U.S. Code \(USC\)\]](#) -- requires that after June 19, 1986, only "lead-free" pipe, solder or flux may be used in the installation or repair of (1) public water systems or (2) any plumbing in a residential facility that is connected to a public water system and provides water for human consumption. "Lead free," as defined in the SDWA, means that the maximum allowed concentration is

- 0.2 percent in solder and flux;
- 8.0 percent in pipes and pipe fittings;
- 4.0 percent by dry weight in plumbing fittings or fixtures after August 6, 2001.

Existing California law ([HSC Section 116875](#)) prohibits:

- Any person from using any pipe, pipe or plumbing fitting or fixture, solder, or flux that is not "lead free" in the installation or repair of any public water system or any plumbing in a facility providing water for human consumption, except when necessary for repair of leaded joints of cast iron pipes;
- Any person from introducing into commerce any pipe, pipe or plumbing fitting, or fixture that is not "lead free," except for a pipe that is used in manufacturing or industrial processing;
- Any person engaged in the business of selling plumbing supplies, except manufacturers, from selling solder or flux in the business that is not "lead free;"
- Any person from introducing into commerce any solder or flux that is not "lead free" unless the solder or flux has a label stating that it is illegal to use solder or flux in the installation or repair of any plumbing providing water for human consumption.

Under existing law, [HSC Section 116875](#) defines "lead free" to mean that the maximum allowed lead content is:

- 0.2 percent lead in solder and flux;
- 8.0 percent lead in pipes and pipe fittings;
- 4.0 percent lead by dry weight in plumbing fittings and fixtures.

As of January 1, 2009, state law requires all pipe, pipe or plumbing fittings or fixtures, solder, or flux to be certified as being in compliance with *HSC Section 116875* by an independent American National Standards Institute (ANSI) accredited third party.

Additionally, DTSC (based on available resources) is required to conduct lead plumbing monitoring and compliance testing, and annually collect field samples for testing and evaluation. ([HSC Section 25214.4.3](#)) The results of testing and evaluation are required to be posted on the DTSC Internet Web site, and transmitted to DPH.

Recent changes to California law, effective January 1, 2010:

As of January 1, 2010, some of the lead content limits described above are reduced. Beginning January 1, 2010, *HSC Section 116875* defines "lead free" to mean that the maximum allowed lead content is:

- 0.2 percent lead in solder and flux;
- 0.25 percent lead in wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures, as determined by a weighted average.

For all purposes other than manufacturing, industrial processing, or conveying or dispensing water for human consumption, the definition of "lead free" remains consistent with federal requirement (see above).

Additionally, beginning January 1, 2010, HSC Section 116875 will prohibit:

- Any person from introducing into commerce any pipe, pipe or plumbing fitting, or fixture *intended to convey or dispense water for human consumption through drinking or cooking* that is not "lead free."

Fact Sheet

NEW! [Fact Sheet: Testing and Evaluation of Lead Content in Plumbing Products, Materials and Components](#), August 2009

[Fact Sheet: Requirements for Low Lead Plumbing Products in California](#), January 2009

Frequently Asked Questions

Q: How could lead get into my drinking water?

Lead gets into water after water leaves your local treatment plant or well. The source of lead in your home's water is most likely corrosion of the pipes or solder in your home's own plumbing. Corrosion results from a reaction between the water and the plumbing parts. Dissolved oxygen, low pH (acidity) and low mineral content in water are common causes of corrosion. One factor that increases corrosion is the practice of grounding electrical equipment (such as telephones) to water pipes. Any electric current traveling through the ground wire will accelerate the corrosion of lead in pipes. Eliminating the lead content in your home plumbing is an effective control of lead in drinking or cooking water.

Q: Which products are affected by the changes to the law that are effective January 1, 2010?

Beginning January 1, 2010, the law requires pipes and pipe fittings, plumbing fittings, or fixtures intended to convey or dispense water for human consumption through drinking or cooking to meet the new "lead-free" definition. Additionally, any other end-use devices intended to convey or dispense water for human consumption through drinking or cooking must meet the new lead-free requirement. Examples include kitchen faucets, bathroom faucets and drinking water fountains. Service saddles, back-flow preventers for non-potable services such as irrigation and industrial, and water distribution main gate valves that are two inches in diameter and above are not covered by the law.

Q: What information do retailers need to obtain from manufacturers of plumbing products?

Beginning January 1, 2009, California law requires that all pipes, pipe or plumbing fittings, fixtures, solders, or flux must be certified by an [American National Standards Institute \(ANSI\) accredited third party](#) as being in compliance with applicable law.

Q: Where can my plumbing products get certified?

A certification must be issued by an independent [American National Standards Institute \(ANSI\) accredited third party](#), including but not limited to, NSF International. For the full list and more information of ANSI accredited third party, please click [the link](#) for ANSI's website.

Q: Will any monitoring or compliance program be set up?

The laws establish a monitoring and compliance testing program for the lead content in plumbing

products. DTSC is required (based on available resources) to annually collect up to 75 drinking water faucets or other drinking water plumbing fittings and fixtures for testing and evaluation, to determine compliance with Health and Safety Code Section 116875. The results will be posted on DTSC's Web site and transmitted to DPH as well.

Q: What does HSC Section 25214.4.3 require DTSC to do?

Health and Safety Code Section 25214.4.3 requires DTSC, based on available resources, to annually select no more than 75 drinking water faucets or other drinking water plumbing fittings and fixtures for testing and evaluation. The results of DTSC's testing and evaluation will be annually posted on DTSC's website and transmitted to the California Department of Public Health. This law took effect on January 1, 2009.

Q: Which products are excluded from DTSC's annual testing and evaluation program required by HSC Section 25214.4.3?

Health and Safety Code Section 25214.4.3 requires DTSC to select drinking water faucets or other drinking water plumbing fittings and fixtures for testing and evaluation. Section 25214.4.3 does not specifically exclude any product(s) from being subject to these testing and evaluation requirements. Rather, the statute provides a narrative standard of those items that are subject to its requirements. That standard is described in the law as "drinking water faucets or other drinking water plumbing fittings and fixtures...." Assembly member Wilma Chan, the author of Assembly Bill 1953 (Chan, Chapter 853, Stats. 2006), which codified the low lead requirements for plumbing products, has published additional guidance about what she intended to be subject to the low lead requirement. Based on the plain language of the statute, the legislative history, and clarifying letter from Chan, DTSC does not intend to test or evaluate the following products as part of its initial round of testing:

- service saddles
- back-flow preventers which protect/separate potable water systems from non-potable services such as irrigation, industrial and laboratory use
- water distribution main gate valves that are two inches in diameter and above
- fire hydrants
- fittings and valves for wastewater distribution systems
- decorative fountains
- marine applications
- air and vacuum appliances
- bathtubs and bathtub faucets
- showers, bath and shower valves, shower heads of all types and shower head adapters
- Roman tubs and Roman tub valves
- sanitary sewer drains
- irrigation sprinklers
- toilets, urinals, bidets and their fittings
- faucets, fittings and fixtures for laboratory uses
- utility, laundry and shampoo fittings
- service sinks
- whirlpools and spa therapy pools
- flexible plumbing connectors and flexible risers not intended for potable water applications (e.g. clothes washing machines, dishwashers)
- hose bibs, fittings, tees and splitters
- flush valves
- solenoid valves
- pre-rinse assemblies for commercial kitchen use that do not include an auxiliary spout or other outlet

In addition, there may be other plumbing fittings and fixtures that are not part of plumbing systems delivering drinking water for human consumption. DTSC does not intend to evaluate any such item, whether listed above or not.

Q: Will DTSC develop a list and release to public indicating which the product will be included in DTSC's testing and evaluation program?

No. Health and Safety Code Section 25214.4.3 does not direct DTSC to establish such a list. But DTSC will post the results of the testing and evaluation conducted on its web site on an annual basis.

Q: Has DTSC developed a protocol for testing plumbing materials?

Health and Safety Code section 25214.4.3 requires DTSC to annually select to the extent resources are available) up to 75 drinking water faucets and other drinking water plumbing fittings and fixtures for testing and evaluation to determine compliance with the lead content standards set forth in Health and Safety Code Section 116875. DTSC is required to use test methods, protocols, and sample preparation procedures that are adequate to determine total lead concentration in a drinking water plumbing fitting or fixture to determine compliance with the lead content standards. In the fact sheet "Testing and Evaluation of Lead Content in Plumbing Products, Materials, and Components", DTSC outlines the testing protocol for lead content analysis in drinking water faucets and other drinking water plumbing fittings and fixtures that DTSC will use in its lead plumbing monitoring and compliance program. The analytical procedures for determining lead content percentage (as set forth in Section 2 of DTSC's Testing and Evaluation of Lead Content in Plumbing Products, Materials, and Components) was used by DTSC during a round-robin study, in which nine laboratories, including DTSC's Environmental Chemistry Laboratory, participated to evaluate laboratory procedures for lead content analysis.

DTSC's *Testing and Evaluation of Lead Content in Plumbing Products, Materials, and Components* outlines an approach for testing lead content in drinking water faucets and other drinking water plumbing fittings and fixtures that third party testing organizations and other stakeholders can use for lead content analysis. DTSC's *Testing and Evaluation of Lead Content in Plumbing Products, Materials, and Components* identifies certain analytical methods for lead content analysis, but permits equivalent analytical methods to be used, provided that adequate performance can be demonstrated. It is anticipated that the general practice of certification of product by third-party will not be impacted except that monitoring of representative sample for compliance will include testing of materials in accordance with the protocols used by the DTSC.

Other Resources

- The [directory of ANSI-accredited certification programs for product certifiers](#)
 - National Sanitation Foundation (NSF)/American National Standard Institute (ANSI) 61: Drinking Water System Components – Health Effects
- [Annex F](#) (2007): Revisions to the Evaluation of Lead, New Requirements for Lead to Further Protect Public Health
- [Annex G](#) (2008): Weighted Average Lead Content Evaluation Procedure to a 0.25 Percent Lead Requirement
- Code of Federal Regulations, Title 40 (40 CFR) Parts [141](#) and [142](#): National Primary Drinking Water Regulations (NPDWR)

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