

Plastic Pipe, Health Effects Testing and Prop 65

Plastic pipe used for plumbing and for water/sewer transport is one of the most studied and regulated materials in construction history. Building codes and other government regulation of plastics pipes set rigorous drinking water and performance properties. PPFA is concerned that commercial and residential consumers may begin to see California Proposition 65 warnings on pipe that are misleading.

While labeling plastic pipe may not be required by Proposition 65, due to an active litigation environment in California, some companies may opt to avoid litigation threats by labeling. PPFA understands why some pipe producers may opt to label, but we remain concerned that the Proposition 65 label will be misunderstood as representing a risk that is not present.

Pipe-Specific Performance Standards

As early as the 1950's, independent third party organizations started testing plastic pipe to determine if its physical properties (e.g. pressure ratings) would permit it to perform as well as systems using more conventional materials such as copper, galvanized steel and cast iron. Later, the federal government enacted the Safe Drinking Water Act (SDWA). This comprehensive legislation triggered the development of related product performance standards and certification programs to assure compliance with the standards. Regulatory scrutiny of plastic pipe increased with the testing for drinking water contaminants identified by the SDWA.

The key performance standard for plastic plumbing pipe is NSF/ANSI Standard 14, *Plastics Piping System Components and Related Materials*. There is virtually no plastic pipe sold for plumbing applications in the U.S. that does not have to meet the requirements of NSF/ANSI Standard 14.

A second relevant standard, now an important part of NSF/ANSI 14, is NSF/ANSI Standard 61, *Drinking Water System Components – Health Effects* which covers all materials and products used for transporting drinking water.

Compliance with it is required by nearly all plumbing codes in the U.S. and, further, 49 U.S. states, including California, and eleven Canadian provinces and territories require products used in public drinking water systems to be certified to NSF 61.

Why should we care about the universal acceptance of NSF/ANSI Standard 61?

This standard contains test protocols to measure the concentration of chemicals leaching from materials into drinking water. Products that fail the test do not receive certification and therefore cannot legally be installed in the provinces and states that require certification to NSF 61.

It is important to understand that NSF 61 covers any and all chemical contaminants (regulated and non-regulated) that are contributed to drinking water. The standard establishes total allowable concentrations for contaminants, which are derived using risk assessment criteria in Annex A of NSF 61. These are established assuming daily exposure to the chemicals over a lifetime. Total Allowable Concentrations (TACs) have been established for over 2000 chemicals.

Many organizations, including CSA, IAPMO, ICC-ES, NSF, WQA, and UL, are accredited by the Standards Council of Canada and the American National Standards Institute to certify products to NSF/ANSI 61. Collectively, these organizations have certified tens of thousands of products.

Organizations that certify products to NSF 61 publish listings of certified products on their websites. Users and specifiers should consult these listings to ensure piping products are compliant with NSF 61, and, therefore, will not add harmful levels of chemicals to drinking water.

California Proposition 65 is not a safety or performance standard

Many may be familiar with what is commonly known as California's Proposition 65 (Prop 65). Recent amendments to the long-standing State of California's Proposition 65 product labeling regulations became effective as of August 30, 2018 and now require that at least one chemical per endpoint (i.e. cancer and/or reproductive toxicity) be named within the warning text when warnings are found to be required under the statute.

Despite the intense regulatory attention given to plastic pipe over the last seventy years, consumers and other users may still see Prop 65 warnings on plastic piping products sold in or outside California. The warning does not mean that use of the product will cause cancer, birth defects or other reproductive harm. Nor does it mean that the product is unsafe. Given the active Proposition 65 litigation environment in California, some companies may opt to avoid litigation threats by labeling even if the warning is not required.

It should be emphasized that California's Proposition 65 regulatory scheme, has no application whatsoever outside the State of California.

Although it may be confusing, buyers and users of plastic plumbing pipes in states other than California also may see Proposition 65 warnings on the pipe or its packaging. This confusing marking can occur because it is often too expensive for manufacturers to segregate their pipe production only for the California market.

An example of this confusion over a California Prop 65 warning is likely caused by a pigment, called titanium dioxide or TiO₂, used in the manufacture of some types of plastic pipe. It protects the pipe from ultraviolet light damage and acts as a colorant. It is also "bound" within the polymer matrix, and this characteristic makes a significant difference under Prop 65.

TiO₂ was added to the Prop 65 list based on a finding by the International Agency for Research on Cancer (IARC) that TiO₂ is possibly carcinogenic to humans (2B classification). According to the Titanium Dioxide Stewardship Council:

"The IARC reclassification was based on two studies in which rats of a uniquely sensitive species to lung overload effects were exposed to excessive concentrations of TiO₂ in a closed chamber for extended periods of time. The agency's classification system requires it to classify a material as carcinogenic based on the results of animal studies even though multiple real world epidemiological studies found no association between TiO₂ and lung cancer in humans." (Emphasis added)

IARC's monograph on TiO₂ can be accessed at this location:

<http://monographs.iarc.fr/ENG/Monographs/vol93/index.php>

The Prop 65 requirement for TiO₂ is applicable only to "airborne, unbound particles of respirable size". As noted above, TiO₂ is "bound" within the polymer matrix of plastic pipe. The pipe or fittings do not, under their normal use conditions, give off unbound TiO₂ in particles of respirable size.

Nevertheless, because TiO₂ is on the Prop 65 list, users may very well start seeing Prop 65 warnings on signs at places of sale as well as on the pipe itself.

Plastic pipe and fittings industry companies, independently and through the Plastic Pipe and Fittings Association, have worked to support the development of effective standards and utilization of comprehensive certification programs that have resulted in the production of safe and better performing products. These efforts are continuing.