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Christmas lights found with potentially unsafe levels of lead

A CNN analysis of four common brands of Christmas lights shows levels of lead experts say are high enough to be dangerous to children.

Lead is used to help prevent the cracking or crumbling of Christmas light wiring insulation.

Manufacturers do not hide the fact that lead is part of the PVC insulation that insulates Christmas light wiring. Lead is used legally to stabilize polyvinyl chloride so it does not crack or crumble with age. The lead also acts as a fire retardant.

But the levels of surface lead surprised Dr. Leo Trasande, a specialist in children's environmental health at New York's Mount Sinai School of Medicine.

"There is no level at which lead exposure is safe," Dr. Trasande said. "Even at one microgram/deciliter -- the lowest level in a person's blood stream that we can detect -- that level has been associated with cognitive impairment in children."

CNN's "American Morning" purchased samples of four common brands of Christmas lights and asked an independent New Jersey-based testing organization, Quantex Laboratories, to check for surface lead. Quantex analyzed three strings of lights from each brand.

The lab followed the Consumer Product Safety Commission's standard wipe test for lead in polyvinyl chloride products, including mini blinds and toys, to see how much lead in the cords' PVC coating would come off on someone's hands.

"You don't realize there's lead in it, you eat a cookie, you eat something without washing your hands, that exposure builds up in your body over time," said Dr. James Menoutis, who runs the lab at Quantex.

In the four brands of lights tested, Quantex found surface lead levels far exceeding the CPSC's recommended children's limit of 15 micrograms.

Wal-Mart brand lights had the highest levels of surface lead, with levels ranging from 86.6 to 132.7 micrograms. GE lights showed surface lead levels from 68 to 109.1 micrograms. Sylvania had surface lead levels from 59 to 70.3 micrograms. Levels of surface lead in the lights made by Philips ranged from a low of 3.2 -- well under the 15 microgram limit -- to 107.2 in another sample.

For Trasande, the high levels of surface lead in the lights are a real concern.

"I wouldn't needlessly expose [children] to a lead-based hazard that could have significant lifelong consequences for that child's cognitive capacity or their attention or other health problems," Trasande said. He recommended leaving lights off trees entirely.

In written statements, the four companies whose lights were tested all expressed concern about safety.

"The special coating around electrical wires on the light sets is necessary to pass the stringent UL safety and quality regulations," Wal-Mart wrote. "We are in full compliance with UL regulations which set the standards for electrical coatings."

Sylvania said its lights are "tested rigorously for safety and have been used safely by millions of Americans for many years."

"Holiday lights are electrical appliances. We encourage consumers to exercise common sense by keeping holiday lights and other electrical products away from the hands and mouths of children," the company wrote.

"We can make a fairly obvious common sense observation: Lights are not toys, should not be handled by children, and are not subject to the same standards for lead," wrote GE. "The CPSC guidelines you refer to are for products that would regularly be handled by children."

Philips pointed out that while the CPSC swipe test "is not a mandated measurement for our industry (it is a test to be applied to children's items and not electrical products), Philips takes matters concerning lead content very seriously. As such, the company and the industry are currently working on technologies to reduce the amount of lead in these products."

The Consumer Product Safety Commission insists Christmas lights do not pose an elevated danger of lead exposure to children. A spokeswoman vigorously criticized the CNN tests, saying that using the CPSC's methods for testing lead on blinds and toys "is like comparing apples to oranges and is rotten to the core."

But in a prior interview, not a response to CNN's tests, the Consumer Product Safety Commission advised children should still keep away from lights because they are electrical products, not toys.

"There are plenty of other things kids can do to help decorate the tree," said Julie Vallese, the CPSC spokesperson. "Lights are something that should be the responsibility of the parent."

Underwriters Laboratories, which inspects tree lights for electrical and fire hazards, said there are substitutes for lead in the insulation, such as calcium and zinc, but those options would be more expensive to manufacture.

So what's the best way to minimize lead exposure from Christmas lights? Experts say only adults should handle the lights. Wear gloves. The lights should be hung out of children's reach. And follow the instructions on the box: "Wash hands after use."