



Subject

The data provided below is in response to the NOTICE OF PROPOSED RULEMAKING TITLE 27, CALIFORNIA CODE OF REGULATIONS AMENDMENT TO SECTION 25705 SPECIFIC REGULATORY LEVELS POSING NO SIGNIFICANT RISK.

Summary

In response to the potential new No Significant Risk level of 0.13 ug/day, Claigan Environmental Inc. (Claigan) tested a small number of common electronic components containing antimony trioxide.

Antimony trioxide is a common flame retardant synergist that allows additive halogenated flame retardants (Br or Cl based) to operate more effectively as a gas phase flame retardant. The antimony from the antimony trioxide reacts with the excited HBr or HCl produced by the burning plastic containing a Br or Cl based flame retardant, further absorbing the energy of burning. Antimony trioxide is a necessary additive to enable halogen based flame retardants to meet stringent US product flammability standards.

Claigan tested the ingestion daily exposure rate using standard NIOSH 9100 wipe tests. NIOSH wipe test is the standard test for California Proposition 65 for the ingestion exposure through hand-to-mouth activity. The wipe test simulates the act of touching a product and loading of the hand with surface chemical from the touched product.

Antimony trioxide is a polar substance and the NIOSH wipe test would normally involve a wet wipe loaded solely with a polar simulant (distilled water). However, the matrix containing antimony trioxide is normally a plastic which is non-polar. A non-polar situation would normally necessitate an applicable non-polar solvent. The common non-polar solvent used by Claigan for NIOSH wipe test is a wet wipe loaded with distilled water containing 6% sebum oil (and a surfactant to allow the mixing of water and sebum oil).

Full details can be provided if needed, but results are below -

Description	Material	Sb conc. (ppm)	NIOSH (Sebum)	NIOSH (water)
Green Wire	Flexible PVC	10388	2.6 ug	1.2 ug
Black Outer Sheath	Flexible PVC	15032	4.6 ug	1.1 ug
White Cover	Hard plastic	26380	(not tested)	ND (< 1ug)
Blue sheath	LDPE	75587	(not tested)	ND (< 1ug)



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Due to the time limitations of the rule making notification process, only a small sample size was tested. In this small size, the antimony was measured for both the distilled water and sebum/water NIOSH 9100 wipe test. The measured number represents a reasonable approximation of Sb loading on the person hands from touching.

Due to hand-to-mouth activity, it is common practice to assume 50% of this material is ingested. Which, for the PVC situation above, would be above the proposed daily exposure limit for antimony trioxide.

IMPORTANT NOTE - The test methods described very briefly are commonly used methods by Claigan. However, the results are only for a small sample size and would likely be further refined by increased sample size.

About Claigan Environmental

Claigan Environmental is a leading laboratory for restricted materials. Claigan has tested thousands of products for Prop 65 compliance. Claigan is an ISO 17025 certified laboratory and is dedicated to providing practical solutions for supply chain due diligence and social responsibility.