

ALASKA TOP HAZARDOUS AIR POLLUTANTS

CADMIUM

#2

Non Cancer Endpoint

Reference Concentration (from California Environmental Protection Agency)

- Cadmium Compounds- 0.00001 mg/m³ for kidney and respiratory effects - humans

Inventory Estimates of Cadmium Compounds

Community	Ranking by Mass	Total Emitted (tons per year)*	Top Sources
Anchorage	52 of 71	0.053	residential heating with natural gas, military, wastewater facilities, incineration
Fairbanks	42 of 58	0.150	residential heating with oil, power generation, military
Juneau	36 of 52	0.047	residential heating with oil
Total of 3 Communities		0.250	

* The mass emission rates are based on input data that may or may not be accurate. The reader should not consider the inventory accurate to three decimal places (one thousandth of a ton). The use of three decimal places allows us to acknowledge small quantities of pollutants rather than showing the emission rate as zero.

Cadmium Compound Sources Expected in Alaska

residential heating	power generators	wastewater facilities
military bases	incinerators	asphalt plants
residential woodstoves	open burning	seafood processing
airports	hospitals	barges

Potential Occupational Exposure to Cadmium Compounds

alloy production	metal plating	pigment production

foundries	battery plants	
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Cadmium Compound Emission Inventory Improvements

- Update emission factors for asphalt plants, open burning and structural fires
- Update emission factors for area source facilities
- Update emission factors for shipping

Cadmium Compound Health Effects

Low level (<0.5 mg/m³): No reported respiratory effects below 0.1 mg/m³, though there is some evidence of kidney damage with long term exposure.

Medium level (0.5 - 2.5 mg/m³): Non-fatal lung inflammation with occupational exposures.

High level (2.5-10 mg/m³): Delayed inflammation of the lung, trachea and bronchioles, with fluid collection in the lungs. Acute exposures for five hours at 9 mg/m³ is fatal.

Very high levels (>10 mg/m³): Exposure to 50 mg/m³ is fatal after one hour.

Cancer ranking: The EPA classifies cadmium as a group B1 carcinogen for lung cancer. Group B1 carcinogens are considered probable human carcinogens where there is some human data and adequate animal data of its cancer causing properties.