

# ALASKA TOP HAZARDOUS AIR POLLUTANTS

## PHOSPHINE

#10	Non Cancer Endpoint
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The inventory method and available data do not indicate emissions occurring in the three inventoried communities. However, this does not mean there are no emissions of this pollutant in the state.

### Reference Concentration

- Phosphine - 0.0003 mg/m<sup>3</sup> for decreased body weight - mice

### Inventory Estimates of Phosphine

Community	Ranking by Mass	Total Emitted (tons per year)	Top Sources
Anchorage*	n/a	---	n/a
Fairbanks*	n/a	---	n/a
Juneau*	n/a	---	n/a
Total of 3 Communities		---	

\* No data to indicate emissions

### Phosphine Sources\* Expected in Alaska

\* No data to indicate emissions

### Potential Occupational Exposure to Phosphine

handling phosphorus explosives	production of acetylene gas	use of calcium phosphide in flare production
bronze alloy makers	munitions workers	pesticide production
		use as intermediate

fertilizer production	semiconductor work	in synthesis of flame retardants for cotton fabrics
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## Phosphine Emission Inventory\* Improvements

\* No data to indicate emissions

## Phosphine Health Effects

**Low (<5 ppm):** 3 ppm safe for long term exposure. Some evidence for transient symptoms of cough and difficulty breathing, headache, numbness, and loss of appetite from exposures between 0.17 to 2 ppm.

**Medium (5 - 10 ppm):** serious effects may occur after several hour exposure. Effects include headaches, dizziness, tremors, fatigue, stomach upset, and pain below the breast bone. May produce fluorescent green sputum, have difficulty breathing, and develop fluid in the lungs.

**High (400 - 600 ppm):** Death can occur after only a half or full hour of exposure.

**Very high (>600 ppm):** Death can occur immediately after exposure to 1000 ppm.

**Cancer ranking:** EPA has classified phosphine as a Group D, not classifiable as to human carcinogenicity.