

APPENDIX A

Assessing Wisconsin's 2010 Benzene Emission EPA / CASRN Screening

More than a thousand manufacturing operations in Wisconsin report to the annual emission inventory ⁽¹⁾. Wisconsin screens its benzene emission by reference to EPA / CASRN risk levels / concentration ranges ⁽²⁾. Screening results show counties with excessive benzene emissions that may jeopardize the public health, welfare and environment ⁽³⁾.

In 2010 facilities operating in twelve counties certified their benzene emission was greater than 5,000 lbs (2,270 Kg).

Wisconsin Counties: Twelve Highest Benzene Emissions

County	2010 Emission (Kilograms)	Average Daily Concentration*	USEPA / IRIS Risk Level
Waupaca	26,882	38.8	E-4
Sheboygan	14,772	12.2	> E-5
Milwaukee	4,415	15.3	E-4
Winnebago	15,600	17.2	E-4
Calumet	4,398	14.6	E-4
Waukesha	3,916	6.8	> E-5
Sauk	6,545	6.3	> E-5
Columbia	3,172	5.2	> E-5
Marinette	12,045	5.0	> E-5
Ashland	11,000	5.0	> E-5
Dane	5,180	4.5	E-5
Douglas	3,318	2.7	E-5

A benzene-emission concentration greater than 4.59 ug/m³/day indicates an EPA risk level greater than E-5. EPA screening shows that ten counties with high benzene concentrations have risk levels > E-5 and E-4. In these ten counties hazardous air pollutant emission may create a cumulative multi-pathway impact off the source property that's greater than 1 x 10⁻⁵⁽⁴⁾.

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Industrial operations' growth and development alters how the state's benzene inventory has been redistributed (Figure 1 Benzene Emissions, Wisconsin 1992 vs 2006).

* Average concentration = (County's Benzene Emission Inventory, $\mu\text{g}/\text{m}^3/\text{day}$) / (County's GPS, m^3)

(1) NR 438

(2) NR 445.08(5)(d)(2) USEPA Integrated Risk Assessment System, CASRN 71-43-2 Benzene Risk Levels / Concentrations (E-4 > E-5 > E-6):

Risk Level	Concentration Range
E-4: 1.0 / 10,000	13.00 - 45.00 $\mu\text{g} / \text{m}^3$
E-5: 1.0 / 100,000	1.30 - 4.59 $\mu\text{g} / \text{m}^3$
E-6: 1.0 / 1,000,000	0.13 - 0.46 $\mu\text{g} / \text{m}^3$

(3) NR 445 Note

(4) NR 445.08(3)(a)(b)

April - August, 2012