Criteria Air Pollutants as Toxic Air Pollutants

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Discussion

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Deriving Acceptable Source Impact Levels

Toxicity Values

Cancer Effects

URF: Unit Risk Factor

Noncancer Effects

RfC: Reference Concentration

REL: Reference Exposure Level

MRL: Minimal Risk Level

Hierarchy	Averaging Time	
I	Annual	$ASIL = \frac{\text{target cancer risk}}{\text{URF x ELAF}}$
II	24-hr	ASIL = chronic RfC, REL or MRL
III		ASIL = intermediate MRL
IV		ASIL = acute MRL
V	1-hr	ASIL = acute REL

NAAQS* & ASILs in 2009

(*National Ambient Air Quality Standard)

Pollutant	Averaging Time	Level (ug/m3)	Last review	ASIL Averaging Time	Level (ug/m3)
Carbon Monoxide	8 hour	10,300	1994		
	1 hour	40,100		1 hour	23,000
Sulfur dioxide	Annual	79	1996		
	24-hr	367			
				1 hour	660
Nitrogen dioxide	Annual	100	1996		
				1 hour	470
Ozone	8 hour	147	1997		
				1 hour	180
Lead	Rolling 3-month	0.15	2008	Annual	0.083

Acute REL less than 1 hour NAAQS

No NAAQS for 1 hour duration

No NAAQS for 1 hour duration

No NAAQS for 1 hour duration

Health endpoint based on cancer risk

NAAQS in 2018

Pollutant	Averaging Time	Level (ug/m3)	Last review	ASIL Averaging Time	Level (ug/m3)
Carbon monoxide	8 hour	10,300	2011		
	1 hour	40,100		1 hour	23,000
Sulfur dioxide	1 hour	196	2010	1 hour	660
Nitrogen dioxide	Annual	100	2010		
	1 hour	188		1 hour	470
Ozone	8 hour	147	~~2015~~		
				1 hour	180
Lead	Rolling 3-month	0.15	2016	Annual	0.083

No change

ASIL > NAAQS

ASIL > NAAQS

NAAQS value lowered, but still only 8-hour averaging time.

No change

De Minimis Comparison

De minimis in WAC 173-460 was set at level comparable to WAC 173-400 (assuming continuous operation)

Pollutant	WAC 173-400-110 De Minimis	WAC 173-460-150 SQER	WAC 173-460-150 De Minimis
Carbon monoxide	5 tpy	50.4 lb/hr	1.14 lb/hr
Lead	0.005 tpy (10 lbs/yr)	16 lb/yr	10 lb/yr
NOx	2 tpy	1.03 lb/hr	0.457 lb/hr
Sulfur dioxide	2 tpy	1.45 lb/hr	0.457 lb/hr
Ozone	NA	0.394 lb/hr	0.0197 lb/hr

2009 Reason for De Minimis Levels for Criteria Pollutants

"As originally proposed, the de minimis values for the above criteria pollutants were far below the de minimis values for those same pollutants in WAC 173-400-110. The effect of this difference would be that most projects with a combustion component would not qualify for the de minimis exemption established in WAC 173-400-110, and would therefore be subject to further regulation. Ecology recognizes the policy rationale behind the de minimis values in WAC 173-400-110, and believes these are more appropriately applied to WAC 173-460 to ensure consistency between the two rule provisions. Ecology therefore applied the existing WAC 173-400-110(5) exemption levels for NO_2, CO, SO_2, and lead to their corresponding toxic air pollutant de minimis levels.

The sulfur dioxide value which was originally set with the EPA IRIS value is replaced with the California OEHHA Acute RfC. This is consistent with how the ASILs, SQERs and de minimis values are set for the other criteria pollutants. Ecology believes that replacing the IRIS value with the OEHHA value will improve permitting consistency and remain protective of human health."

Source: Department of Ecology, "Concise Explanatory Statement and Responsiveness Summary for the Adoption of WAC 173-400-110, General Regulations for Air Pollution Sources, Chapter 173-460 WAC, and Controls for New Sources of Toxic Air Pollutants." May 19, 2009. Publication 09-02-008. Pages 2 and 3.