

**3745-81-11 Maximum contaminant levels and best available technologies for inorganic contaminants.**

(A) The following maximum contaminant levels (MCLs) for inorganic contaminants apply to all public water systems.

Contaminant	MCL in milligrams per liter
Nitrate (as nitrogen)	10
Nitrite (as nitrogen)	1
Total nitrate and nitrite (as nitrogen)	10

(B) The following MCLs for inorganic contaminants apply to all community and nontransient noncommunity public water systems.

Contaminant	MCL in milligrams per liter
Antimony	0.006
Arsenic	0.010 <sup>a</sup>
Asbestos	7 <sup>b</sup>
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide (as free cyanide)	0.2
Fluoride	4.0
Mercury	0.002
Selenium	0.05
Thallium	0.002

a. This MCL is effective January 1, 2006. Until then, the MCL for arsenic is 0.05 milligrams per liter.

b. In units of millions of fibers per liter, where only fibers longer than ten micrometers are counted.

- (C) The following MCL for bromate applies to all community and nontransient noncommunity public water systems that treat their water with ozone.

Contaminant	MCL in milligrams per liter
Bromate	0.010

- (D) The following MCL for chlorite applies to all community and nontransient noncommunity public water systems that treat their water with chlorine dioxide.

Contaminant	MCL in milligrams per liter
Chlorite	1.0

- (E) The director may determine that a public water system shall apply best available technology in order to reduce the level of a contaminant to below its MCL. The director identifies the following as the best available technologies (BATs) for removal of the following inorganic contaminants from water.

Contaminant	BATs
Antimony	2, 7
Arsenic <sup>a</sup>	1, 2, 5, 6, 7, 9, 12 <sup>b</sup>
Asbestos	2, 3, 8
Barium	5, 6, 7, 9
Beryllium	1, 2, 5, 6, 7
Bromate	14
Cadmium	2, 5, 6, 7
Chlorite	15
Chromium	2, 5, 6 <sup>c</sup>
Cyanide	5, 7, 13
Mercury	2 <sup>d</sup> , 4, 6 <sup>d</sup> , 7 <sup>d</sup>
Nitrate	5, 7, 9
Nitrite	5, 7

Selenium	1, 2 <sup>e</sup> , 6, 7, 9
Thallium	1, 5
a. BATs for arsenic (V). Pre-oxidation may be required to convert arsenic (III) to arsenic (V)	
b. To obtain high removals the iron to arsenic ratio must be at least 20:1	
c. BAT for chromium (III) only	
d. BAT only for mercury concentrations of ten micrograms per liter or less	
e. BAT for selenium(IV) only	

Key to BATs in table:
1 = Activated alumina
2 = Coagulation/filtration
3 = Direct filtration
4 = Granular activated carbon
5 = Ion exchange
6 = Lime softening
7 = Reverse osmosis
8 = Corrosion control
9 = Electrodialysis
10 = Chlorine
11 = Ultraviolet
12 = Oxidation/filtration
13 = Alkaline chlorination (pH > 8.5)
14 = Control of ozone treatment process to reduce production of bromate
15 = Control of treatment processes to reduce disinfectant demand and control of disinfectant treatment processes to reduce disinfectant levels

3745-81-11

4

Effective: 08/01/2005

R.C. 119.032 review dates: 04/26/2005 and 08/01/2010

Promulgated Under: 119.03

Statutory Authority: RC Section 6109.03, 6109.04

Rule Amplifies: RC Section 6109.04

Prior Effective Dates: 12/27/78, 03/01/88, 09/13/93, 01/01/02