

## Chapter NR 448

## CONTROL OF BERYLLIUM EMISSIONS

NR 448.01 Applicability; purpose.  
 NR 448.02 Definitions.  
 NR 448.03 Beryllium emission limits.

NR 448.04 Stack emission sampling and emission limits.  
 NR 448.05 Emission testing — rocket firing or propellant disposal.

**Note:** Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1997, No. 493.

**NR 448.01 Applicability; purpose. (1) APPLICABILITY.** This chapter applies to all air contaminant sources which may emit beryllium and to their owners and operators.

**(2) PURPOSE.** This chapter is adopted under ss. 285.11, 285.13, 285.17 and 285.27, Stats., to establish emission limitations and stack sampling and testing procedures for beryllium emissions from air contaminant sources in order to protect air quality.

**Note:** This chapter is based on the federal regulations contained in 40 CFR part 61, Subparts C and D, as last revised on October 17, 2000.

**History:** Cr. Register, September, 1986, No. 369, eff. 10-1-86; am. (1), Register, May, 1992, No. 437, eff. 6-1-92.

**NR 448.02 Definitions.** The definitions contained in ch. NR 400 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

**(1)** “Beryllium” means the element beryllium. Where weights or concentrations are specified, the weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

**(1m)** “Beryllium alloy” means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

**(2)** “Beryllium-containing waste” means material contaminated with beryllium or beryllium compounds, or both, used or generated during any process or operation performed by a source subject to this chapter.

**(3)** “Beryllium ore” means any naturally occurring material mined or gathered for its beryllium content.

**(4)** “Beryllium propellant” means any propellant incorporating beryllium.

**(5)** “Ceramic plant” means a manufacturing plant producing ceramic items.

**(6)** “Extraction plant” means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

**(7)** “Foundry” means a facility engaged in the melting or casting of metal or metal alloys.

**(8)** “Machine shop” means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching or other similar operations.

**(9)** “Propellant” means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

**(10)** “Propellant plant” means any facility engaged in the mixing, casting or machining of propellant.

**(11)** “Rocket motor test site” means any building, structure, facility or installation where the static test firing of a beryllium rocket motor or the disposal of beryllium propellant, or both, is conducted.

**History:** Renum. from NR 154.01 and cr. (intro.), Register, September, 1986, No. 369, eff. 10-1-86; am. (intro.), Register, December, 1995, No. 480, eff. 1-1-96; CR 02-097: am. (intro.), renum. (1) to be (1m), cr. (1), Register, June 2004 No. 582, eff. 7-1-04.

**NR 448.03 Beryllium emission limits. (1)** Emissions to the atmosphere may not exceed 10 grams of beryllium over a 24-hour period from:

(a) Extraction plants, ceramic plants, foundries, incinerators and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys or beryllium-containing waste.

(b) Machine shops which process beryllium, beryllium oxides or any alloy when the alloy contains more than 5.0% beryllium by weight.

**(2)** The burning of beryllium or beryllium-containing waste, except propellants, is prohibited except in incinerators, emissions from which must comply with sub. (1).

**History:** Renum. from NR 154.19 (5) (a) and (b) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (1) (intro.), Register, May, 1992, No. 437, eff. 6-1-92; am. (1) (b) and (2), Register, November, 1999, No. 527, eff. 12-1-99.

**NR 448.04 Stack emission sampling and emission limits. (1)** Unless a waiver of emission testing is obtained from the department, each owner or operator of a source covered under s. NR 448.03 (1) on which construction or modification commenced after February 1, 1984 shall test emissions from the source within 90 days of startup.

(a) The department shall be notified at least 30 days prior to an emission test to afford it the opportunity to have a representative present to witness the testing procedures.

(b) Samples shall be taken over such a period as is necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities or other factors, the calculation of maximum 24-hour-period emissions will be based on that combination of factors which is likely to occur during the subject period and which result in the maximum emissions. No changes in the operation may be made which would potentially increase emissions above that determined by the most recent source test until a new emission level has been estimated by calculation and the results reported to the department.

(c) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the department by registered letter dispatched before the close of the next business day following the determinations.

(d) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by a department representative for a minimum of 2 years.

**(2)** Emissions to the atmosphere from rocket-motor test sites may not cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an effect adverse to public health would occur.

**(3)** If combustion products from the firing of beryllium propellant are collected in a closed tank, emissions from such tank may not exceed 2.0 grams per hour and a maximum of 10 grams per day.

(4) (a) Sources subject to sub. (3) shall be continuously sampled during the release of combustion products from the tank so that compliance with the standards can be determined. The tests shall be conducted in accordance with Method 103 or Method 104 of 40 CFR part 61, Appendix B, incorporated by reference in s. NR 484.04 (23).

(b) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the same site. All determinations shall be reported to the department by registered letter dispatched before the close of the next business day following the determination.

(c) Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection by a department representative for a minimum of 2 years.

(d) The department shall be notified at least 30 days prior to an emission test to afford it the opportunity to have a representative present to witness the testing procedures.

**History:** Renum. from NR 154.19 (5) (c) 1. to 5., (d), (e) and (g) 1. to 4., Register, September, 1986, No. 369, eff. 10-1-86; am. (2) and (3), Register, May, 1992, No. 437, eff. 6-1-92; am. (2) and (4) (a) 1. and 2., Register, December, 1995, No. 480, eff. 1-1-96; am. (4) (a) (intro.) and r. (4) (a) 1. and 2., Register, November, 1999, No. 527, eff. 12-1-99.

**NR 448.05 Emission testing — rocket firing or propellant disposal.** (1) Ambient air concentrations shall be measured during and after firing of a rocket motor or propellant disposal and in such a manner that the effect of these emissions can be compared with the standard set in s. NR 448.04 (2). The sampling techniques shall be approved by the department.

(2) All samples shall be analyzed and results shall be calculated within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the same site. All results shall be reported to the department by registered letter dispatched before the close of the next business day following determination of the results.

(3) Records of air sampling test results and other data needed to determine integrated intermittent concentrations shall be retained at the source and made available for inspection by a department representative for a minimum of 2 years.

(4) The department shall be notified at least 30 days in advance of an air sampling test to have a representative present to witness the testing procedures.

**History:** Renum. from NR 154.19 (5) (f), and am. Register, September, 1986, No. 369, eff. 10-1-86.