# **01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**

**001 DIVISION OF QUALITY ASSURANCE & REGULATIONS**

**Chapter 350: REGULATIONS UNDER THE MAINE COMMERCIAL FERTILIZER LAW**

**SUMMARY:** The purpose of this chapter is to set forth uniform standards for labeling, registration and regulation of fertilizers.

**1. DEFINITIONS**

1. “Biosolids” means a primary organic solid material produced by wastewater treatment processes that can be beneficially recycled for its plant nutrient content and soil amending characteristics. Biosolids also include “Sludge” as defined in 38 M.R.S. §1303-C (28-A).

2. “Coated Slow Release Fertilizer” means a product containing sources of water soluble nutrients, release of which in the soil is controlled by a coating applied to the fertilizer.

3. “Commercial Value Found” means the number determined by the sum obtained from adding the percentage of Total Nitrogen (N), Available Phosphate (P2O5) and Soluble Potash (K2O).

4. “Commercial Value Guaranteed” means the number determined by the sum obtained from adding the percentage guaranteed of Total Nitrogen, Available Phosphate (P2O5) and Soluble Potash (K2O).

5. “Fertilizer Grade” means the minimum guarantee of available plant food expressed in terms of total Nitrogen (not ammonia), Available Phosphate and Soluble Potash. The values for Total Nitrogen (N), Available Phosphate (P2O5) and Soluble Potash (K2O), expressed as the grade must coincide with the guaranteed analysis statement. Only one set of values may be used in the grade designation and with the exception of Specialty Fertilizer, the grade must be expressed in whole numbers.

6. “Guarantee” means Guaranteed Analysis.

7. “Guaranteed Analysis” means the minimum percentage of Total Nitrogen (N), available Phosphate (expressed as percent P2O5), water soluble Potassium (expressed as percent K2O) and other nutrients present in quantities that conform to Chapter 350 section III.

8. “Investigation Allowance” means an allowance for variations inherent in the taking, preparation and analysis of an official sample of fertilizer.

9. “Lot” means an identifiable quantity of fertilizer that can be sampled officially according to the Association of Official Analytical Chemists (AOAC) International procedures, up to and including a freight car load or 50 tons maximum, or that amount contained in a single vehicle, or that amount delivered under a single invoice.

10. “Overall Index Value” means the value obtained from the calculation: (Commercial Value Found) x 100/(Commercial Value Guaranteed).

11 “Primary Nutrients” means the following plant foods: Nitrogen (N); Available Phosphate (P2O5); and Soluble Potash (K2O).

12. “Secondary and Micro Plant Nutrients” means those nutrients, other than primary nutrients, that are essential for the normal growth of plants and that may need to be added to the growth medium. Secondary plant nutrients include calcium, magnesium, sulfur, molybdenum, nickel, sodium and zinc.

13. “Slow release” or “controlled release” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate or urea, ammonium phosphate, or potassium chloride. Such delay of initial availability or extended time of continued availability may occur by a variety of mechanisms. These mechanisms may include controlled water solubility of the material (by semi permeable coatings, occlusion, or by inherent water insolubility of polymers, natural nitrogenous organics, protein materials, or other chemical forms), by slow hydrolysis of water soluble low molecular weight compounds, or by other means.

14. “Specialty Fertilizer” means a fertilizer that is distributed for non-farm use. Specialty fertilizers may be guaranteed in fractional units of less than one percent of total nitrogen, available phosphate, and soluble potash: provided, further, that fertilizer materials, bone meal, manures, and similar materials may be guaranteed in fractional units.

15. “Unit” means twenty (20) pounds of plant food or one percent (1%) of a ton.

16. “Waste Material” means material defined as “hazardous matter”, “hazardous substance”, “hazardous waste”, “residual”, “septage” or “solid waste” in federal, state and local laws, including, but not limited to the *Maine Hazardous Waste, Septage and Solid Waste Management Act*, 38 M.R.S. §1301 *et seq.*; the *Maine Hazardous Matter Control Act*, 38 M.R.S. §1317 *et seq.*; and the *Maine Uncontrolled Hazardous Substance Sites Law*, 38 M.R.S. §1361 *et seq.*; as well as the rules promulgated under these statutes.

**2. REGISTRATION**

1. Each brand and grade of commercial fertilizer must be registered in accordance with the requirements of Title 7 M.R.S. §743 before being offered for sale, sold or distributed in the State of Maine.

2. Applications for the registration of fertilizers manufactured from or containing “waste materials”, as that term is defined in Chapter 350 section 1.(16), and applications for registration of fertilizers containing materials which may be considered deleterious as defined 7 M.R.S. §747 subsection 2, *Deleterious Materials*, must include the following information:

A. Specific identification of any and all waste materials and/or deleterious materials contained in the fertilizer, including but not limited to their nature, composition, and source; and

B. An analysis of materials contained in the fertilizer by an independent laboratory verifying compliance with the standards for metals as established in Chapter 350 section 8;

3. When reviewing an application for the registration of a fertilizer, the Commissioner of the Department of Agriculture, Conservation and Forestry may submit the application for registration to the Maine Department of Environmental Protection and/or the Maine Department of Human Services for a review and evaluation of any potential deleterious or harmful impact on the environment, public health, and animal health. In addition, where a fertilizer is subject to the application requirements of the *Agronomic Utilization of Residual Rules* administered by the Maine Department of Environmental Protection, 06-096 c. 419 (“Chapter 419”) as well as these rules, the Commissioner of the Department of Agriculture, Conservation and Forestry shall require the applicant for registration under these rules to first obtain all the permits or licenses required by DEP under Chapter 419 and to submit copies of those permits or licenses along with its application under these rules.

4. Warning or Caution statements are required on the label for any product which contains any material in sufficient amount to be deleterious or harmful as stated in Title 7 M.R.S. section 747 subsection 2, Deleterious Materials.

**3. PLANT NUTRIENTS**

1. In addition to Total Nitrogen (N), Available Phosphate (P2O5), and Soluble Potash (K2O), other plant nutrients when mentioned in any form or manner shall be registered and shall be guaranteed. Guarantees shall be made on the elemental basis, sources of the elements guaranteed and proof of availability shall be provided to the Maine Department of Agriculture upon request. Except guarantees for those water soluble nutrients labeled for ready to use foliar fertilizers, ready to use specialty liquid fertilizers, hydroponic or continuous liquid feed programs and guarantees for potting soils, the following percentages represent the minimum concentrations for any secondary or minor nutrients contained in fertilizers which may be accepted for registration:

| **Element** | **Minimum Conc., %** |
| --- | --- |
|  |  |
| Calcium (Ca) | 1.0000 |
| Magnesium (Mg) | 0.5000 |
| Sulfur (S) | 1.0000 |
| Boron (B) | 0.0200 |
| Chlorine (Cl) | 0.1000 |
| Cobalt (Co) | 0.0005 |
| Copper (Cu) | 0.0500 |
| Iron (Fe) | 0.1000 |
| Manganese (Mn) | 0.0500 |
| Molybdenum (Mo) | 0.0005 |
| Nickel | 0.0010 |
| Sodium (Na) | 0.1000 |
| Zinc (Zn) | 0.0500 |

2. Only fertilizers containing one or more of the above listed plant nutrients, with guaranteed amounts meeting the minimum concentrations, may be accepted for registration. Any of the above listed plant nutrients which are guaranteed must appear, in the order listed, immediately following guarantees for the primary nutrients of nitrogen, phosphate and potash.

**4. FERTILIZER DEFICIENCY – INVESTIGATIONAL ALLOWANCES**

1. A commercial fertilizer shall be deemed deficient if the analysis of any nutrient is below the guaranteed percentage by an amount exceeding the values in the following schedule, or if the overall index value of the fertilizer is below 98%.

| **Guarantee, percent** | **Nitrogen**  **(N)** | **Avail. Phosphate**  **(P2O5)** | **Sol. Potash**  **(K2O)** |
| --- | --- | --- | --- |
|  | **Investigational Allowance, percent** | | |
| 04 or less | 0.49 | 0.67 | 0.41 |
| 05 | 0.51 | 0.67 | 0.43 |
| 06 | 0.52 | 0.67 | 0.47 |
| 07 | 0.54 | 0.68 | 0.53 |
| 08 | 0.55 | 0.68 | 0.60 |
| 09 | 0.57 | 0.68 | 0.65 |
| 10 | 0.58 | 0.69 | 0.70 |
| 12 | 0.61 | 0.69 | 0.79 |
| 14 | 0.63 | 0.70 | 0.87 |
| 16 | 0.67 | 0.70 | 0.94 |
| 18 | 0.70 | 0.71 | 1.01 |
| 20 | 0.73 | 0.72 | 1.08 |
| 22 | 0.75 | 0.72 | 1.15 |
| 24 | 0.78 | 0.73 | 1.21 |
| 26 | 0.81 | 0.73 | 1.27 |
| 28 | 0.83 | 0.74 | 1.33 |
| 30 | 0.86 | 0.75 | 1.39 |

2. For values not listed in the above schedule, calculate the appropriate value by interpolation.

3. The overall index value is calculated by comparing the commercial value guaranteed with the commercial value found and shall be determined by using the following formula:

A. The calculation of the overall index value shall be determined by multiplying 100 times the commercial value found and dividing by the commercial value guaranteed.

4. Secondary and minor elements shall be deemed deficient if any nutrient’s concentration is below the guaranteed percentage by an amount exceeding the values in the following schedule:

| **Element** | **Investigational Allowance** |
| --- | --- |
| Calcium | 0.2 unit + 5% of guarantee |
| Magnesium | 0.2 unit + 5% of guarantee |
| Sulfur | 0.2 unit + 5% of guarantee |
| Boron | 0.003 unit + 15% of guarantee |
| Cobalt | 0.0001 unit + 30% of guarantee |
| Chlorine | 0.005 unit + 10% of guarantee |
| Copper | 0.005 unit + 10% of guarantee |
| Iron | 0.005 unit + 10% of guarantee |
| Manganese | 0.005 unit + 10% of guarantee |
| Molybdenum | 0.0001 unit + 30% of guarantee |
| Sodium | 0.005 unit + 10% of guarantee |
| Zinc | 0.005 unit + 10% of guarantee |
| **The maximum allowance when calculated in accordance to the above shall be 1 unit (1%).** | |

**5. FERTILIZERS NOT MEETING STANDARDS FOR INGREDIENTS**

1. Any fertilizer failing to meet the standards for ingredients established by Chapter 350 sections 3 or 4 will not be accepted for registration.

2. If it is determined that a fertilizer fails to meet the standards for ingredients established by Chapter 350 sections 3 or 4 after it is registered, then the registration of that fertilizer may be suspended or cancelled in accordance with 7 M.R.S. §743.

3. Nothing in this subsection shall be construed as a limitation of the Department of Agriculture, Conservation and Forestry’s authority under 7 M.R.S. Chapter 103, subchapter 5.

**6. FERTILIZER LABELING**

1. The following information, in the format presented, is the minimum required for all fertilizer labels. For packaged products, the information must appear either on the front or back of the package and occupy at least the upper-third of the package, or the information may be printed on a tag and securely attached to the package. This information shall be in a readable and conspicuous form. For bulk products, the information must be contained on a printed form, which must accompany the fertilizer and be supplied to the purchaser at time of delivery.

A. Net Weight

B. Brand

C. Grade (Provided that the grade shall not be required when no primary nutrients are claimed)

D. Guaranteed Analysis

Total Nitrogen (N)............................................\_\_\_\_\_\_\_\_%

\_\_\_\_\_\_\_\_% Ammoniacal Nitrogen

\_\_\_\_\_\_\_\_% Nitrate Nitrogen

\_\_\_\_\_\_\_\_% Water Insoluble Nitrogen

\_\_\_\_\_\_\_\_% Urea Nitrogen

\_\_\_\_\_\_\_\_% (Other recognized and

determinable forms

of Nitrogen)

Available Phosphate (P2O5)............................. \_\_\_\_\_\_\_\_%

Soluble Potash (K2O)................................. .... \_\_\_\_\_\_\_\_%

(Other nutrients, elemental basis)…………….\_\_\_\_\_\_\_\_%

E. Sources of nutrients, when shown on the label, shall be listed below the completed guaranteed analysis statement.

F. Name and address of registrant

G. Directions for use for fertilizer distributed to the end user:

(1) For specialty fertilizer, minimum directions for use shall include:

(a) Recommended application rate or rates in units of weight or volume per unit of area coverage (where application rates are given in volume, the label shall provide sufficient information to calculate the application rates by weight);

(b) Application timing and minimum intervals to apply the product when plants can utilize nutrients; and

(c) The statement “Apply Only as Directed” or a statement of similar designation.

(2) For all other fertilizers, minimum directions for use shall include at least one of the following:

(a) A statement such as:

Use in accordance with recommendations of a qualified individual or institution (such as a certified crop advisor, agronomist, or university crop extension publication) or apply according to recommendations in your approved nutrient management plan; or

(b) Detailed directions for a specific use.

2. Product Labels that Meet Metal Guidelines for metals set forth in Chapter 350 section 8 may include the following statement on the label:

***“When applied as directed, this product meets the guidelines for metals adopted by the Association of American Plant Food Control Officials.”***

**7. SLOWLY RELEASED PLANT NUTRIENTS**

1. No fertilizer label shall bear a statement indicating that certain plant nutrients contained in a fertilizer are released slowly over a period of time, unless the slow release components are identified and guaranteed at a level of at least 15% of the total guaranteed for that nutrient(s).

2. Products with recognized slow release properties include:

A. Water insoluble products, such as natural organics, ureaform materials, urea-formaldehyde products, isobutylidene diurea, and oxamide;

B. Coated slow release products, such as sulfur coated urea and other encapsulated soluble fertilizers;

C. Occluded slow release products, where fertilizers or fertilizer materials are mixed with waxes, resins, or other materials and formed into particles; and

D. Products containing water soluble nitrogen such as ureaform materials, urea-formaldehyde products, methylenediurea (MDU), dimethylenetriurea (DMTU), dicyanodiamide (DCD). The terms, “water insoluble”, “coated slow release”, “slowly available water soluble”, and “occluded slow release” are accepted as descriptive of these products, provided the manufacturer can show a testing program substantiating the claim.

3. Until more appropriate methods are developed, AOAC International Method 970.04 (15th Edition) shall be used to confirm the coated slow release and occluded slow release nutrients and others whose slow release characteristics depend on particle size. AOAC International Method 945.01 (15th Edition) shall be used to determine the water insoluble nitrogen or organic materials

**8. ADULTERATED MATERIALS**

1. Fertilizers containing guaranteed amounts of phosphates and/or micronutrients shall be deemed to be adulterated when they contain metals in amounts greater than the levels of metals established by the following table1:

| Metals | ppm per  1% P2O5 | ppm per  1% Micronutrients3 |
| --- | --- | --- |
| 1. Arsenic | 13 | 112 |
| 2. Cadmium | 10 | 83 |
| 3. Cobalt | 136 | 2,2284 |
| 4. Lead | 61 | 463 |
| 5. Mercury | 1 | 6 |
| 6. Molybdenum | 42 | 3004 |
| 7. Nickel | 250 | 1,900 |
| 8. Selenium | 26 | 180 |
| 9. Zinc | 420 | 2,9004 |

**To use the Table:**

Multiply the percent guaranteed P2O5 or sum of the guaranteed percentages of all micronutrients (Iron, Manganese, Zinc, etc.) in each product by the value in the appropriate column in the Table to obtain the maximum allowable concentration (ppm) of these metals. The minimum value for P2O5 utilized as a multiplier shall be 6.0. The minimum value for micronutrients utilized as a multiplier shall be 1. If a product contains both P2O5 and micronutrients multiply the Guaranteed percent P2O5 by the value in the appropriate column and multiply the sum of the guaranteed percentages of the micronutrients by the value in the appropriate column. Utilize the higher of the two resulting values as the maximum allowable concentrations.

1. Biosolids, and all compost products4, shall be deemed to be adulterated when they exceed the levels of metals permitted by the United States Environmental Protection Agency *Code of Federal Regulations*, 40 CFR Part 503 or 06-096 CMR 419. Dried biosolids and manure, as well as manipulated manure products either separately or in combination, shall also be deemed adulterated when they exceed the levels of metal permitted by the United States Environmental Protection Agency *Code of Federal Regulations*, 40 CFR Part 503 or 06-096 CMR 419. Hazardous waste derived fertilizers (as defined by EPA) shall be deemed to be adulterated when they exceed the levels of metals permitted by the United States Environmental Protection Agency *Code of Federal Regulations*, 40 CFR Parts 261, 266 and 268.

Footnotes:

1 Woltering, Daniel M. 2004. Health Risk Assessment for Metals in Inorganic Fertilizers: Development and Use in Risk Management. In Environmental Impact of Fertilizer on Soil and Water. Hall, William L. Jr. and Wayne P. Robarge, Editors. American Chemical Society Symposium Series No. 872. p124-147.

2 These guidelines are not intended to be used to evaluate horticultural growing media claiming nutrients but may be applied to the sources of the nutrients added to the growing media.

3 Micronutrients (also called minor elements) are essential for both plant growth and development and are added to certain fertilizers to improve crop production and/or quality. These micronutrients are defined by AAPFCO's Official Fertilizer Term, T-9.

4 Only applies when not guaranteed.

5 Includes all compost products separately or in combination with biosolids, manure or manipulated manure, even those registered as fertilizers (making nutrient claims).(Official 2003)

STATUTORY AUTHORITY: 7 MRS §748

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CORRECTIONS:

February, 2014 – agency names, formatting

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