**ISO Standards for adoption April/May 2019**

**1.ISO 7409:2018**

Title: Fertilizers -- Marking -- Presentation and declarations

**Scope**

This international standard specifies the procedure for marking containers or labels for fertilizers.

**2.ISO 14820-1:2016**

Title Fertilizers and liming materials -- Sampling and sample preparation -- Part 1: Sampling

**Scope**

This international standard specifies sampling plans and methods of representative sampling of fertilizers and liming materials to obtain samples for physical and chemical analysis, from packages and containers up to and including 1 000 kg, from fluid products and from fertilizers in bulk provided the product is in motion.

**3.ISO 14820-2:2016**

Title: Fertilizers and liming materials -- Sampling and sample preparation -- Part 2: Sample preparation

**Scope**

 This international standard specifies methods for the reduction and preparation of samples of fertilizers and liming materials and sets out the requirements for sample preparation reports. It also specifies methods for the preparation of test samples and test portions from laboratory samples of fertilizer for subsequent chemical or physical analysis. It does not cover the preparation of samples for certain physical tests which require test portions of more than 2 kg. It is applicable to all fertilizers.

**4.ISO 15604:2016**

Title: Fertilizers -- Determination of different forms of nitrogen in the same sample, containing nitrogen as nitric, ammoniacal, urea and cyanimide nitrogen

**Scope**

This international standard specifies a method for the determination of any one form of nitrogen in the presence of any other form.

5.ISO 15959:2016

Title: Fertilizers -- Determination of extracted phosphorus

**Scope**

This international standard specifies a method for the determination of phosphorus in fertilizer extracts.

The method is applicable to all extracts of fertilizers for the determination of the different forms of phosphorus as phosphorus soluble in mineral acids, water soluble phosphorus, phosphorus soluble in solutions of ammonium citrate, phosphorus soluble in 2 % citric acid and phosphorus soluble in 2 % formic acid.

**6.ISO 18642:2016**

Title: Fertilizer and soil conditioners -- Fertilizer grade urea -- General requirements

**Scope**

This international standard specifies the general requirements regarding testing methods, sampling and preparation of test sample, marking and labelling, package, transport, and storage of fertilizer grade urea.

It is applicable to urea in solid form, e.g. granular, prilled, or pastilled, which is made by the reaction of ammonia with carbon dioxide. Urea can be classified by its intended use, industrial and/or agricultural. It is mainly used as fertilizer in the field of agriculture. It is only applicable to fertilizer grade urea in the field of agriculture.

**7.ISO 18643:2016**

Title: Fertilizers and soil conditioners -- Determination of biuret content of urea-based fertilizers -- HPLC method

**Scope**

This international standard specifies the test procedure for determination of the biuret content in liquid and solid urea-based fertilizers based on the HPLC method.

**8.ISO 18644:2016**

Title: Fertilizers and soil conditioners -- Controlled-release fertilizer -- General requirements

**Scope**

This international standard specifies the requirements for testing methods, sampling and preparation of test sample, marking and labelling, as well as package, transport, and storage of controlled-release fertilizer.

The standard is applicable to controlled-release products having one or more primary fertilizer nutrient (nitrogen and/or phosphorous and/or potassium) in a controlled-release form. They can be made by bulk blending (BB) fertilizers or by special processes.

**9.ISO 18645:2016**

Title: Fertilizers and soil conditioners -- Water soluble fertilizer -- General requirements

**Scope**

This international standard specifies the requirements for testing methods, sampling and preparation of test sample, marking and labelling, as well as package, transport, and storage of water soluble fertilizers.

The standard is applicable to water soluble fertilizers which are completely soluble in water and are suitable for fertigation and sprinkling irrigation, as well as for foliar application (foliar feeding).

**10.ISO 19670:2017**

Title: Fertilizers and soil conditioners -- Solid urea aldehyde slow release fertilizer -- General requirements

**Scope**

This international standard specifies general requirements, analytical methods, sampling and preparation of test sample, marking and labelling, packaging, transport and storage for solid urea aldehyde slow release fertilizer.

The standard applies to pure solid urea aldehyde slow release fertilizer, i.e. urea formaldehyde (UF), methylene urea (MU), crotonylidene diurea (CDU), isobutylidene diurea (IBDU). This document does not apply to mixtures of nitrogenous fertilizers containing solid urea aldehyde slow release fertilizer.

**11.ISO 19746:2017**

Title: Determination of urea content in urea-based fertilizers by high performance liquid chromatography (HPLC)

**Scope**

This international standard specifies the test procedure for determining the urea content in urea-based fertilizers, including urea, urea aldehydes [methylene urea fertilizers, isobutylene diurea (IBDU), crotonylidene diurea (CDU)], urea triazone fertilizers, urea ammonium nitrate (UAN), sulfur- and polymer-coated urea (SCU and PCU), as well as compound fertilizers containing urea. The method is based on High Performance Liquid Chromatography (HPLC).

The proposed method is an extension of the AOAC Official Method 2003.14 which was collaboratively studied for the "Determination of Urea in Water-Soluble Urea-Formaldehyde Fertilizer Products and in Aqueous Urea Solutions" in 2003. The method was published in the Journal of AOAC in 2004[4]and was granted the First Action in 2003 and the Final Action in 2008.

This method also applies to the determination of biuret content in urea containing fertilizer with the results published in the J. AOAC in 2014[5]. This method was adopted by the International Organization for Standardization (ISO) as a Committee Draft (ISO/CD 18643) in 2014, and after review and the Ring Test Analyses[6].

**12.ISO 19822:2018**

Fertilizers and soil conditioners -- Determination of humic and hydrophobic fulvic acids concentrations in fertilizer materials.

**Scope**

This international standard specifies the procedure for the analysis of humic acids and hydrophobic fulvic acids which is applicable to dry and liquid materials used as ingredients in commercial fertilizers, soil amendments, and geological deposits.

**13.ISO 20702:2017**

Title: Fertilizers and soil conditioners -- Determination of micro amounts of inorganic anions in fertilizers by ion chromatography

**Scope**

This international standard specifies the ion chromatography method for the determination of micro amounts of water soluble inorganic anions, such as fluoride (F−), chloride (Cl−), bromide (Br−), iodide (I−), nitrite (NO2−) and thiocyanate (SCN−), in fertilizers.

**14.ISO 20977:2018**

Liming materials -- Determination of size distribution by dry and wet sieving

**Scope**

This international standard specifies two methods for the determination of the particle size distribution of liming materials.

Method A (the dry sieving method) is applicable to all liming materials except wet and paste-like products. Method A is not applicable if blinding, caking, electrostatic charges or agglomeration occur after drying.

Method B (the wet sieving method) is applicable to products which are susceptible to blinding, caking, electrostatic charges or agglomeration after drying. Method B can be used to determine the primary particle size distribution of granulated products. Method B is not applicable to burnt lime and liming materials containing water-soluble constituents.

**15..ISO 21263:2017**

Title: Slow-release fertilizers -- Determination of the release of the nutrients -- Method for coated fertilizers

**Scope**

This international standard specifies a method for the determination of the slow release properties of nutrients from coated fertilizers. pH-dependent hydrolysis and degradation by biological or microbial mechanisms are excluded.

The specified method is only applicable to products releasing any nutrients by means of a non-biological process (i.e. those where the nutrients are released by a physical mechanism). Microbial attack on the coating (e.g. sulfur coated fertilizers) and the consequences thereof are not measurable by the technique described.

This method involves a lengthy process which may not be appropriate for day to day testing purposes. Accelerated methods can be used provided they are correlated with this document. An example of such an accelerated method is described in Annex B. Regression analysis can also be used for this purpose.

**16.ISO 22146:2018**

Title: Carbonate liming materials -- Determination of reactivity -- Automatic titration method with citric acid

**Scope**

This international standard specifies a method for determining the reactivity of calcium carbonate and calcium magnesium carbonate liming materials. It assesses the speed and effectiveness of their neutralising potential by automatic titration with citric acid.

This method is applicable only to liming materials with a maximum particle size of 6,3 mm determined in accordance with ISO 20977.

NOTE For marble dolomite (BET procedure as defined in ISO 9277 below 500 m2/kg), see EN 14984.

17.ISO 25475:2016

Title: Fertilizers -- Determination of ammoniacal nitrogen

**Scope**

This international standard specifies a method for the determination of the ammoniacal nitrogen content in fertilizers. The method is applicable to all nitrogenous fertilizers including compound fertilizers, in which nitrogen is found exclusively either in the form of ammonium salts or ammonium salts together with nitrates.

This standard is not applicable to fertilizers containing urea, cyanamide or other organic nitrogenous compounds.

**18.ISO 25705:2016**

Title: Fertilizers -- Determination of urea condensates using high-performance liquid chromatography (HPLC) -- Isobutylidenediurea and crotonylidenediurea (method A) and methylen-urea oligomers (method B)

**Scope**

This international standard specifies methods for the determination of isobutylidene diurea (IBDU), Crotonylidene diurea (CDU) (method A) and methylene-urea oligomers (MU) (method B) in fertilizers using high-performance liquid chromatography (HPLC).

The method is applicable to all fertilizers which do not contain interfering organic compounds.