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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 39544-2020

Natural rubber latex concentrate. Determination of total phosphate content. Spectrophotometric method

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Issued by: State Administration for Market Regulation, China National Standardization Administration

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1:1-2009:

This standard adopts the redrafting method to amend and adopt ISO 19043:2015 "Concentrated natural rubber latex using spectrophotometric method to determine total phosphate

The content of ":

The technical differences between this standard and ISO 19043:2015 and the reasons are as follows:

---Added warnings;

--- Regarding normative references, this standard has made adjustments with technical differences to adapt to my country's technical conditions: Adjustment situation

It is concentratedly reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows:

* Replace ISO 124 with GB/T 8298 which is modified to adopt international standards;

* Replace ISO 648 with GB/T 12808;

--- Change "hydrochloric acid 37%" to "hydrochloric acid" and add the content expression "a solution with a mass fraction of 37%" (see 5:1, ISO 19043:2015

5:1), with clear as the mass concentration;

--- Modified the description about potassium dihydrogen phosphate (stock solution), and added "standard materials can be purchased directly" (see 5:4,

ISO 19043:2015 5:4), because the reagent has commercially available standard materials;

--- Change "ppm" to "mg/L" (see 5:4 and 6:3, ISO 19043:2015 5:4 and 6:3) to use legal measurement units;

--- Change "The difference between the two readings should not exceed 30mg/kg" to "The difference between duplicate parallel determination results should not exceed 30mg/kg" (see

6:1, ISO 19043:2015 6:1), because the reading is only the absorbance reading displayed by the spectrophotometer, and expressed in mg/kg

The result of the determination must be calculated by the formula;

--- Deleted "after using a spectrophotometer to measure the absorbance at 470nm" (see 6:3:3 of ISO 19043:2015) to make the table

The description is more concise;

--- Change "then add 10cm3 vanadyl molybdate (5:2)" to "then add 10mL vanadyl molybdate (5:3) (see 6:4,

ISO 19043:2015 6:4) to correct the article number;

--- Change "dilute with HCl solution (5:1) to 50cm3" to "dilute with HCl solution (5:2) to 50mL" (see 6:4,

ISO 19043:2015 6:4) in order to maintain the consistency with the standard phosphate solution preparation method in 6:3:

---Modified the expression method of the calculation formula of total phosphate content and added "the test result is the average table of duplicate parallel determination results

Show" (see Chapter 7, Chapter 7 of ISO 19043:2015) to meet the requirements of GB/T 1:1-2009 and facilitate use:

This standard was proposed by the China Petroleum and Chemical Industry Federation:

This standard is under the jurisdiction of the National Rubber and Rubber Products Standardization Technical Committee (SAC/TC35):

This standard was drafted by: Agricultural Products Processing Research Institute, Chinese Academy of Tropical Agricultural Sciences, Hainan Natural Rubber Quality Inspection Station, Hainan Province

Quality Supervision and Inspection Institute, Hainan China Rubber Technology Co:, Ltd:

1 Scope

This standard specifies the method for determining the total phosphate content of concentrated natural rubber latex:

This standard applies to natural rubber latex derived from the Brazilian para rubber tree, but not necessarily to natural rubber latex from other sources:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article

Pieces: For undated references, the latest version (including all amendments) applies to this document:

GB/T 8298 Determination of total solid content of latex (GB/T 8298-2017, ISO 124:2014, MOD)

GB/T 12808 Single-marked pipette for laboratory glassware

3 Principle

About 20g of concentrated natural rubber latex with a known total solid content is coagulated with hydrochloric acid to remove the coagulated rubber, and then the whey is passed through filter paper

filter: By using a spectrophotometer to measure the absorbance at a wavelength of 470nm, the residual phosphate content in a known volume of whey was determined:

4 Instruments

4:1 Balance, accurate to 0:1mg:

4:2 Single-marked pipettes, with capacities of 10mL and 25mL, meet the requirements of accuracy level A in GB/T 12808:

5 Reagents

Use confirmed analytical reagents and deionized water or water of equivalent purity:

5:1 Hydrochloric acid

A solution with a mass fraction of 37%:

5:2 Hydrochloric acid 1:24

Measure 40 mL of 37% hydrochloric acid (5:1) and mix with water to 1000 mL:

5:3 Vanadium molybdate

Vanadium molybdate solution is prepared according to the following steps: