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SN

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

SN/T 1504.1-2014

Replacing SN/T 1504.1-2005

Plastics used for food container and package. Part 1: Determination of phenolic antioxidants and erucamide slip additives in polypropylene homopolymer formulations. Liquid chromatography

食品容器、包装用塑料原料 第1部分：聚丙烯均聚物中酚类抗氧化剂和芥酰胺爽滑剂的测定方法 液相色谱法

(English Translation)

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Foreword

SN/T 1504 "food containers, plastic packaging materials" is divided into five parts.

--- Part 1. polypropylene homopolymer phenolic antioxidants and erucamide slip agent liquid chromatography method for the determination;

--- Part 2. linear low density polyethylene phenolic antioxidants and erucamide slip agent liquid chromatography method for the determination;

--- Part 3. ethylene polymers and ethylene - vinyl acetate (EVA) copolymer butyl - hydroxy toluene (BHT) measured gas Chromatography;

--- Part 4. High density polyethylene phenolic antioxidants was measured by liquid chromatography;

--- Part 5. Polyolefin Determination of impurity elements in the X-ray fluorescence spectrometry.

This section SN/T 1504 Part 1.

This section drafted in accordance with GB/T 1.1-2009 given rules.

The partial replacement of SN/T 1504.1-2005 "food packaging plastic container materials - Part 1. polypropylene homopolymer phenolic antioxidant Erucamide slip agent and method for measuring liquid chromatography ", this section compared with the SN/T 1504.1-2005, the main differences are as follows.

Text --- this section in accordance with GB/T 1.1-2009 write;

--- 4.5 filter plate pore size from the original 0.45μm to "pore size 0.45μm or less";

--- Increased 4.5 annotations;

--- 5.6 10μL injection volume is changed from "10μL, or based on liquid chromatography systems appropriate to reduce the injection volume." the partial modification using ASTM D6042. Content 2009, where the title changed to "food containers, packaging

material polypropylene plastic Homopolymer of phenolic antioxidants and erucamide slip agent liquid chromatography method for the determination. " this section proposed and managed by the National Certification and Accreditation Administration Committee.

This section is drafted. Tianjin People's Republic of China Exit Inspection and Quarantine.

1 Scope

SN/T 1504 provisions of this part of the food containers, packaging polypropylene homopolymer phenolic antioxidants and erucamide slip additives Determination.

This section applies to food containers and packaging polypropylene homopolymer phenolic antioxidants and erucamide slip agent and liquid chromatography Determination.

2 Method summary

Ground to a particle size of 20 polypropylene mesh powder, with dichloromethane and then cyclohexane (7525) was refluxed extraction or ultrasonic extraction Take, extract by liquid chromatography to measure the internal standard method.

3 Reagents and solutions

3.1 2 (2 'hydroxy-5'-methylphenyl) benzothiazole (Tinuvin-P), 99%.

3.2

Vitamin E (VitaminE).

3.3

erucamide (Erucamide), 99%.

3.4

tris (2,4-di-t-butylphenyl) phosphite (Irgafos168), 99%.

3.5

tetrakis (3,5-di-tert-butyl-4-hydroxy) benzenepropanoic acid pentaerythritol ester (Irganox1010), 99%.

3.6

beta- (3,5- di-t-butyl-4-hydroxyphenyl) propionate, n-octadecanol ester (Irganox1076), 99%.

3.7 1,3,5-tris (3,5-di-tert-butyl-4-hydroxybenzyl) isocyanurate (Irganox3114), 99%.

3.8

dichloromethane. chromatography.

3.9

Cyclohexane. chromatography.

3.10

TP Internal standard solution. dichloromethane - solution was added a mixed Tinuvin-P cyclohexane internal standard (7525), formulated as a concentration A solution of 51.8mg L /.

3.11

Water. Helium degassed through degassing or vacuum filtration.

3.12

acetonitrile. chromatography.

3.13

isopropanol. chromatography.

NOTE: dichloromethane and cyclohexane combustible, the extraction process is carried out in a fume hood.

4 Instrument

4.1

liquid chromatography. equipped with UV detector, column heating system and gradient elution device with 10 μ L sample injection valve.

4.2

Grinding. filled with 20 mesh sieve and water cooling system, to prevent thermal decomposition of the antioxidant.

4.3

reflux extraction device. the condenser (24/40 ground glass mouth), 125mL flat-bottomed flask (with 24/40 ground glass mouth) and with magnetic Agitation heating plates, sample extraction device, see Appendix A in Figure A.1.

4.4

ultrasonic bath instrument. ultrasonic water bath, 125mL flat-bottomed flask with a 24/40 ground glass mouth, 24/40 ground glass stopper.