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

GB/T 24793-2009

**Photography -- Processing wastes -- Determination of silver
content**

摄影 加工废液 银含量的测定

(English Translation)

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Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3.1 Flame atomic absorption spectrometry (AAS)
- 3.2 Potentiometric titration analysis (PT)

Foreword

This standard is identical with ISO 10348:1993 "Determination of silver content photographic processing waste liquid" (in English).

This standard is equivalent to translate ISO 10348:1993.

For ease of use, this standard made the following editorial changes.

- a) "this International Standard" be replaced by "this standard";
- b) use a decimal point instead of a decimal comma " , " . " , " ;
- c) Delete ISO 10348:1993 Foreword instead of the standard "foreword"; the introduction of the direct translation as a standard introduction.
- d) Since the original standard ISO 10348. most have new standards referenced in the 1993 version of normative references. either merge or abolished, so this standard when referring to these standards, using the latest version. Specific changes are as follows.
 - 1) ISO 385-1. 1984 Laboratory glassware Burettes - Part 1. General requirements to. ISO 385:2005 Laboratory glassware Buret
 - 2) ISO 648. 1977 Laboratory glassware single reticle pipette Read. GB/T 12808-1991 laboratory glassware single marking pipette
 - 3) ISO 835-1. 1981 Laboratory glassware indexing pipettes - Part 1. General requirements ISO 835-2. 1981 Laboratory glassware indexing pipettes - Part 2. Not regulated pipette tube time ISO 835-3. 1981 Laboratory glassware indexing pipette Part 3. 15s predetermined waiting time pipette ISO 835-4. 1981 Laboratory glassware indexing pipette Part 4. blowout pipettes (defunct) to. ISO 835:2007 Laboratory glassware indexing pipette
 - 4) ISO 1042. 1983 laboratory glassware single marking flask Read. GB/T 12806-1991 laboratory glassware single marking flask

5) ISO 3696. 1987 specifications and test methods of laboratory water analysis Read. GB/T 6682. specifications and test methods for laboratory water analysis 2008

6) ISO 4788. 1980 laboratory glassware graduated cylinder to. ISO 4788:2005 laboratory glassware graduated cylinder

7) ISO 5667-1. 1980 Water quality - Sampling - Part 1. Sampling Program Design Guidelines ISO 5667-2:1991 Water quality - Sampling - Part 2. Sampling Techniques Guide (defunct) ISO 5667-3:1994 Water quality - Sampling - Part 3. preservation and handling of samples guidance to. ISO 5667-1:2006 Water quality - Sampling - Part 1. Sampling procedures and sampling techniques design guidelines ISO 5667-3:2003 Water quality - Sampling - Part 3. preservation and handling of water samples Guidelines Appendix A of this standard is a normative appendix.

The standard proposed by China Petroleum and Chemical Industry Association.

The photosensitive material standard by the National Standardization Technical Committee (SAC/TC102) centralized.

This standard was drafted. China Lucky Film Group Corporation.

Drafters of this standard. Cao Yongli, Baoli Min.

GB/T 24793-2009/ISO 10348:1993

Introduction

This standard is one of the special photographic processing waste liquid series of standards for analysis; contains a photographic processing waste liquid silver content analysis and testing method.

Analysis of photographic processing waste and emissions in the silver content, which faced unique problems in sample collection, processing and analysis. These ones the problem is not fully included in the standard file, the present development of standards that is provided for this set of methods. Listed in the course of a test these chemicals corrosive, toxic or other hazards. A clear warning, caution and danger warning has been specified, regardless of any additional Chemicals should be standard throughout the implementation of preventive measures requirements.

As for waste emissions, best photographic processing plants to establish rules to be managed by the appropriate chemical analysis. Sometimes the analysis chamber is it allowed, but usually require sampling and analysis outside the wash plant.

Photographic processing waste liquid silver soluble sulfate form or other complex form, but it is a waste of other Interaction points, generating an unstable system. This system comprises a number of structurally different soluble silver. Analysis of heavy metals in waste samples Products are generally stabilized by acidified with nitric acid. This treatment

method for the analysis of photographic processing waste liquid silver is unsatisfactory. because Sulphate sulfur labile in an acidic solution, the processing routine is actually promotes the formation of insoluble silver. Cyanide iodide solution is that these waste Liquid silver effectively protecting agent).

The criteria include flame atomic absorption spectrometry (AAS) and iodide potentiometric titration (PT) two analytical methods. Different Analysis will determine the different sample preservation and processing methods. Once the sample is fixed iodide, cyanide solution, usually AAS analysis sample Goods. The iodide titration requires digestion to dissolve silver, and accompanied by the removal of the concentrated sample was boiled in step (Digestion A) caused by interference Su. Standard AAS method recommended digestion method with hydrochloric acid, does not apply to the preparation of the samples analyzed in silver.

GB/T 24793-2009/ISO 10348:1993 Determination of silver content photographic processing waste

1 Scope

This standard specifies the method of analysis and testing photographic processing waste liquid silver content, including sampling, sample preservation and analysis.

We give support two methods of analysis of three steps.

- a) Flame Atomic Absorption Spectrometry (AAS);
- b) two kinds iodide potentiometric titration (PT).

Select a sample processing method depends on the analysis method and the constituents of the sample. When the chosen method of analysis by AAS iodide, cyanide treatment or preserved samples can be analyzed directly. When selecting PT method is given by Two Digestion way. A digestion method for low-salt waste samples, Digestion B is suitable for samples containing high solids content.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 12806-1991 laboratory glassware single marking flask (eqv ISO 1042. 1983) GB/T 12808-1991 laboratory glassware single marking pipette (eqv ISO 648. 1977) GB/T 6682-2008 analytical laboratory use specifications and test methods (ISO 3696. 1987, MOD) ISO 385:2005 Laboratory glassware Buret ISO 835:2007 Laboratory glassware

indexing pipette ISO 4788:2005 laboratory glassware graduated cylinder ISO 5667-1:2006 Water quality - Sampling - Part 1. Sampling procedures and sampling techniques design guidelines ISO 5667-3:2003 Water quality - Sampling - Part 3. preservation and handling of water samples Guidelines the first part of the 1982 chemical analysis reagent 1.. ISO 6353-1 General test methods ISO 6353-2. 1983 Reagents for chemical analysis - Part 2. Specification of the first series ISO 6353-3. 1987 Reagents for chemical analysis - Part 3. Specification of the second series Principle 3

3.1 Flame atomic absorption spectrometry (AAS)

Silver hollow cathode lamp heating the excitation and emission spectra of the ultraviolet radiation comprising silver atoms band. The silver ions in solution is sucked Flame, when the light emitted by the mercury lamp flame, silver ions will follow Beer's law relationship between radiation absorption spectrum of silver.

Where.

C_{Ag} --- concentration of silver ions;

K --- constant.

Often used to establish the calibration curve method to clear this relationship.

3.2 Potentiometric titration analysis (PT)

Iodide solution was titrated with silver ion containing solution, will precipitate silver iodide formed following relationship.

GB/T 24793-2009/ISO 10348:1993