

ICS 7.1
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 15193.19-2015

Replacing GB 15193.19-2003

**National food safety standard -- Methods for disposing
mutagens, teratogens and carcinogens**

食品安全国家标准 致突变物、致畸物和致癌物的处理方法

(English Translation)

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Foreword

This standard replaces GB 15193.19-2003 "mutagens, teratogens and carcinogens approach." this standard compared with GB 15193.19-2003, the main changes are as follows.

--- Standard name was changed to "national food safety standards mutagens, teratogens and carcinogens approach";

--- Revised range.

--- Increased test purposes, the "general principles" to "principle", delete the original content "to make such substances destroyed chemical reaction Treatment, such as a compound susceptible to oxidation (such as hydrazine, or aromatic amines containing carbon-carbon double bonds separated = compound), can be saturated Potassium permanganate in acetone (1000mL dissolved in acetone 15g potassium permanganate) solution. Alkylate in principle with a suitable Affinity agent, such as water, hydroxide ions, ammonia, and other sulfite and thiosulfate reacts been destroyed, "was changed to" a

number of chemical reactions should destroy such substances caused mutagenic, teratogenic and carcinogenic effects of functional groups, so as to achieve food safety toxicology evaluation the method used mutagens, teratogens and carcinogens harmless treatment purposes. "

- Revised approach benzidine, beta- naphthylamine.
- Increases the processing method of sodium azide.
- Modify the processing method of aflatoxin B1.
- Modify the benzo [a] anthracene name and processing method, the name of 3-methyl gall anthracene, processing method and abbreviation.
- Modified 2-acetylamino-fluorene, 2,7-diamino fluorene, benzo [a] pyrene approach.
- Increased 7,12-dimethyl-benz [a] anthracene, 2-amino-fluorene, 2-nitro-fluorene, anthracene-9,10-dimethyl, 2,4,7-trinitro-fluorenone processing method.
- Modify the N- nitroso-methyl urea processing method and abbreviation, N- methyl -N-nitro-nitrosoguanidine -N- name and Treatment method.
- Increasing the processing method of Ethylnitrosourea.
- Modify the treatment of mitomycin C.
- Changing the name of N- nitroso dimethylamine, abbreviation and treatment methods.
- Modified ethyl methane sulfonate, methyl methanesulfonate name and processing method.
- Modify the processing method of ochratoxin A.
- Revised approach ICR-170, the name of triethylene melamine and treatment.
- Increased 4-nitro-quinoline -N- oxide, ICR-191, furanose amide, 9-amino acridine, treatment of PCBs.
- Revised approach cyclophosphamide.
- Increasing the Congo red approach.
- Increases the processing method dimethylaminobenzaldehyde diazonium sulfonate.
- Increasing the processing method of sodium pentachlorophenol.
- Increase the cumene hydroperoxide approach.
- Increased daunorubicin treatment.
- Removed ethyleneimine, Trenimone approach.
- Added Appendix A.

National Food Safety Standard Mutagens, teratogens and carcinogens Approach

1 Scope

This standard specifies the laboratory mutagens, teratogens and carcinogens approach.

This standard applies to food safety toxicology evaluation methods used mutagens, teratogens and carcinogens treatment.

2 Test purposes and principles

For most types of mutagens, teratogens and carcinogens, could use some kind of chemical reaction damage caused by mutagenic substances Change, teratogenic and carcinogenic effects of functional groups, so as to achieve food safety toxicology evaluation methods used mutagens, teratogens and cause Carcinogen treatment and disposal purposes.

3 Processing Method

Note: This chapter relates mutagens, teratogens and carcinogens in the English name of the control, CAS and the initials refer to Appendix A.

3.1.1 Reagents

2mol/L sulfuric acid, 0.2mol/L potassium permanganate, sodium metabisulfite, 10mol/L of potassium hydroxide.

3.1.2 Processing Method

3.1.2.1

such as benzidine or beta- naphthylamine concentrations higher than 0.9mg/mL, diluted with water to 0.9mg/mL or less.

3.1.2.2

Each 10mL benzidine or beta- naphthylamine was added 5mL 0.2mol/L potassium permanganate solution/and 5mL 2mol/L sulfuric acid solution Liquid, the reaction should be continued for at least 10h.

3.1.2.3

Each 10mL reaction system was added 0.8g of sodium metabisulfite decolorization of the reaction system, if not completely decolorized then add more.

3.1.2.4

Each reaction system mentioned above was added 10mL 8mol/L of potassium hydroxide, the reaction system is strongly alkaline (pH > 12), the trans should exothermic process.

3.1.2.5

plus diluted with 100mL of water, filtered manganese compound, and the filtrate after the chemical waste in accordance with waste disposal.

Sodium azide 3.2

3.2.1 Reagents

Sodium nitrite, 4mol/L of sulfuric acid, the volume ratio of mass concentration of 10% potassium iodide solution, 1mol/L hydrochloric acid, starch.

3.2.2 Solution preparation

Sodium nitrite solution. 7.5g of sodium nitrite in 38mL water.

3.2.3 Processing Method

3.2.3.1

Each 5g of sodium azide were dissolved in 100mL of water.

3.2.3.2

sodium nitrite solution with stirring to a solution of sodium azide (3.2.3.1) in.

3.2.3.3

slowly added 4mol/L sulfuric acid until acidic reaction system and the stirring was continued for 1h, such as more samples, the process proceeds with an ice bath Carried out this operation need to be carried out in a fume hood.

3.2.3.4

should be sodium nitrite, and then adding sulfuric acid, was added in reverse order will produce harmful substances.

3.2.3.5

Add a few drops of the reaction solution to a system of equal volume mass concentration of 10% by volume potassium iodide solution was added 1 drop of 1mol/L Hydrochloric acid and 1 drop of the starch solution. If the reaction solution dark blue shows the presence of excess nitrite that the reaction has been completed, in accordance with the waste chemical waste disposal Management. If you are not adding more excess sodium nitrite.

3.3.1 Reagents

5.25% sodium hypochlorite, acetone.