Japan Food Research Laboratories

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July 24, 2012

REPORT

Client: NIKKEN Co., Ltd
2-19-1 Kanagawa, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0045, Japan

Sample(s): CLINCA 205 (N)

Title: Leaching Test

Received date of sample(s): June 22, 2012

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Principal Investigator

Jan. 30, 2013
Date

JAPAN FOOD RESEARCH LABORATORIES

Leaching Test

1. Client

   NIKKEN Co., Ltd

2. Sample

   CLINCA 205 (N)

3. Outline of methods

   A leaching test was performed on the sample according to the Notification No. 45 (2000) "Test for materials of mechanical equipment and materials" on the bases of the Ministerial Ordinance No. 15 (2000) "Technical standards for water utilities", Section No. 1, Provision No. 17-ハ, issued by the Ministry of Health, Labour and Welfare.

4. Results

   Table 1 shows the results of the leaching test.

   The results meet the standards of the Notification No. 45 (2000) "Test for materials of mechanical equipment and materials" issued by the Ministry of Health, Labour and Welfare.

Table 1: Results of the leaching test

Item	Result	Quantitation limit
Cadmium and its compound	Not detected	0.0001 mg/L
Mercury and its compound	Not detected	0.00005 mg/L
Selenium and its compound	Not detected	0.001 mg/L
Lead and its compound	Not detected	0.001 mg/L
Arsenic and its compound	Not detected	0.001 mg/L
Hexavalent chromium compound	Not detected	0.005 mg/L
Cyanide ion and cyanogen chloride	Not detected	0.001 mg/L
Nitrate nitrogen and nitrite nitrogen	Not detected	0.2 mg/L
Fluorine and its compound	Not detected	0.05 mg/L
Boron and its compound	Not detected	0.1 mg/L
Carbon tetrachloride	Not detected	0.0002 mg/L
1,4-Dioxane	Not detected	0.005 mg/L
1,2-Dichloroethane	Not detected	0.0002 mg/L
Cis-1,2-dichloroethylene and trans-1,2-dichloroethylene	Not detected	0.001 mg/L
Dichloromethane	Not detected	0.001 mg/L
Tetrachloroethylene	Not detected	0.001 mg/L
Trichloroethylene	Not detected	0.001 mg/L
Benzene	Not detected	0.001 mg/L
Formaldehyde	Not detected	0.008 mg/L
Zinc and its compound	Not detected	0.01 mg/L
Aluminium and its compound	Not detected	0.02 mg/L
Iron and its compound	Not detected	0.03 mg/L
Copper and its compound	Not detected	0.01 mg/L
Sodium and its compound	0.5 mg/L	0.1 mg/L
Manganese and its compound	Not detected	0.005 mg/L
Chloride ion	Not detected	5 mg/L
Evaporation residue	≤10 mg/L	10 mg/L
Anionic surfactant	Not detected	0.02 mg/L
Nonionic surfactant	Not detected	0.005 mg/L
Phenols	Not detected	0.0005 mg/L
Organic matters (amount of total organic carbon)	Not detected	0.3 mg/L
Taste	Normal	—
Odour	Normal	—
Chromaticity	≤0.5°	0.5°
Turbidity	≤0.05°	0.05°
Epichlorohydrin	Not detected	0.001 mg/L
Amines	Not detected	0.01 mg/L
2,4-Toluene diamine	Not detected	0.002 mg/L
2,6-Toluene diamine	Not detected	0.001 mg/L
Vinyl acetate	Not detected	0.01 mg/L
Styrene	Not detected	0.002 mg/L
1,2-Butadiene	Not detected	0.001 mg/L
1,3-Butadiene	Not detected	0.001 mg/L
N,N-Dimethylanilin	Not detected	0.01 mg/L

5. Methods

1) Extraction procedure

The sample was washed with flowing tap water (Tama-shi, Tokyo) for 1 hour, rinsed with pure water three times and then washed with a leachate (pH 7.0 ± 0.1, hardness 45 ± 5 mg/L, alkalinity 35 ± 5 mg/L, residual chlorine 1.0 ± 0.2 mg/L) three times. Then, the sample was immersed in the leachate and allowed to stand for 24 hours at about 23 ˚C. The obtained solution was used as the test water.

In addition, the leachate alone (without the sample) was prepared in the same manner as the test water and used as the method blank.

Under the client's orders, the immersion rate was set at 50 g of the sample per 1 L of the leachate, and a conditioning procedure was not performed.

2) Analytical method

Table 2 shows the analytical methods.

Table 2: Analytical methods

Item	Analytical method
Cadmium and its compound	Inductively coupled plasma mass spectrometry
Mercury and its compound	Flameless atomic absorption spectrometry
Selenium and its compound	Inductively coupled plasma mass spectrometry
Lead and its compound	Inductively coupled plasma mass spectrometry
Arsenic and its compound	Inductively coupled plasma mass spectrometry
Hexavalent chromium compound	Inductively coupled plasma spectrometry
Cyanide ion and cyanogen chloride	Post-column ion chromatography
Nitrate nitrogen and nitrite nitrogen	Ion chromatography
Fluorine and its compound	Ion chromatography
Boron and its compound	Inductively coupled plasma spectrometry
Carbon tetrachloride	Purge-and-trapping/gas chromatography-mass spectrometry
1,4-Dioxane	Solid phase extraction-gas chromatography-mass spectrometry
1,2-Dichloroethane	Purge-and-trapping/gas chromatography-mass spectrometry
Cis-1,2-dichloroethylene and trans-1,2-dichloroethylene	Purge-and-trapping/gas chromatography-mass spectrometry
Dichloromethane	Purge-and-trapping/gas chromatography-mass spectrometry
Tetrachloroethylene	Purge-and-trapping/gas chromatography-mass spectrometry
Trichloroethylene	Purge-and-trapping/gas chromatography-mass spectrometry
Benzene	Purge-and-trapping/gas chromatography-mass spectrometry
Formaldehyde	Derivative solvent extraction-gas chromatography-mass spectrometry
Zinc and its compound	Inductively coupled plasma spectrometry
Aluminium and its compound	Inductively coupled plasma spectrometry
Iron and its compound	Inductively coupled plasma spectrometry
Copper and its compound	Inductively coupled plasma spectrometry
Sodium and its compound	Inductively coupled plasma spectrometry
Manganese and its compound	Inductively coupled plasma spectrometry
Chloride ion	Ion chromatography
Evaporation residue	Gravimetric method
Anionic surfactant	Solid phase extraction-high performance liquid chromatography
Nonionic surfactant	Solid phase extraction-spectrophotometry
Phenols	Derivative solid phase extraction-gas chromatography-mass spectrometry
Organic matters (amount of total organic carbon)	Total organic carbon analyzer method
Taste	Sensory test
Odour	Sensory test
Chromaticity	Transmitted light measuring method
Turbidity	Integrating nephelometry
Epichlorohydrin	Purge-and-trapping/gas chromatography-mass spectrometry
Amines	Spectrophotometry
2,4-Toluene diamine	Solid phase extraction-gas chromatography-mass spectrometry
2,6-Toluene diamine	Solid phase extraction-gas chromatography-mass spectrometry
Vinyl acetate	Head-space gas chromatography-mass spectrometry
Styrene	Head-space gas chromatography-mass spectrometry
1,2-Butadiene	Head-space gas chromatography-mass spectrometry
1,3-Butadiene	Head-space gas chromatography-mass spectrometry
N,N-Dimethylanilin	Head-space gas chromatography-mass spectrometry

End of Report