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Identify technical guide for pesticides POPs waste

Chinese research academy of environmental sciences

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catalogue

1 The purpose of compilation

To better implement the persistent organic pollutant wastes in an environmentally sound management and disposal projects, and guide the local solid waste management sector of POPs waste survey to identify and to ensure the scientific accuracy of the data, compile Identify technical guide for pesticides POPs waste.

2 Compilation basis

The People's Republic of China Solid Waste Pollution Prevention Act

People's Republic of China to fulfill the <on Persistent Organic Pollutants Stockholm Convention national implementation plans

National list of hazardous waste

HJ / T 20-1998 industrial solid waste sampling system like technical specifications

Hazardous waste identification standards of GB5085-2007

HJ/T298-2007 hazardous waste identification of technical specifications

Storage of dangerous waste pollution control standard (GB18597-2001)

Hazardous chemical safety labels to write To you (GB / T 15258-94)

Transport of Dangerous Goods Packaging General technical requirements (GB12463-90):

General Principles of the commonly used dangerous chemicals storage (GB15603-1995)

POPs wastes in an environmentally sound management and disposal project implementation plan

3 Sample

3.1 The sampling object

According to the classification and identification of targets of POPs waste, solid, semi-solid and liquid, respectively, determine the sampling object.

3.2 Sample number and sample quality

According to the total amount of waste, determine the minimum sampling number based on table 1.

Table 1 Solid waste collection of minimum sample number

Solid wastes（q/t）	Sample number（count）
q≤5	5
5＜q≤25	8
25＜q≤50	13
50＜q≤90	20
90＜q≤150	32
150＜q≤500	50
500＜q≤1000	80
q＞1000	100

If the waste is historical stockpiling state, sample should be based on the total amount, and choose the least sample number according to the table 1. The sample quality should also meet the needs of the analysis of the operation. If no special requirements, sample about 500g.

3.3 Sampling method

（1）According to the waste character, the solid waste sample should be collected respectively with long shovel type sampler, sleeve type sampler or probe sample; Sampling tools and sample containers require metal, glass, PTFE material, prohibited the use of plastic, rubber and other congener materials , the sample containers also requires can seal. Sampling procedures and sampling record should take under HJ/T 20.

(2) Loose accumulation of waste

Stacking height is less than or equal to 0.5m of the bulk accumulation of solid, semi-solid waste, waste pile tile thickness of 10-15cm rectangle, divided into 5N (N is the number of samples, the same below) of equal area net grid, sequentially numbered; Extracted N grid as a sampling

unit using a random number table method in HJ/T 20, vertically take full thickness of the waste in the center of the grid position with sampling shovel or spade. Take each grid of the waste as a sample.

For number of stacking height is less than or equal to 0.5m bulk accumulation of solid waste, Select the accumulation time of a minimum of waste heap, taken in accordance with the bulk accumulation of solid waste sampling method.

Stacking height is greater than 0.5m of the bulk accumulation of solid, semi-solid waste, should be stratified to take samples; sampling layers should not be less than two layers, According to solid, semi-solid waste accumulation height equal interval layout; the number of samples each floor should be equal. Stratified sampling can use the sample drilling or mechanical drilling.

(3) Storage pool and waste in containers

For the storage pool waste, divided into 5 N area of equal grid, order Numbers; Use HJ/T 20 in random access method extracting N grid as sampling unit to take samples. Sampling, in the center of the grid vertical insert waste bottom with soil sampler or long shovel type sampler, rotate out after 90 DHS, as a copy of samples. The thickness of the waste in the pool is equal to or greater than 2 m, should be divided into the upper (depth of 0.3 m place), central (1/2 depths), and at the bottom (5/6 depths) three layer to take samples; number of samples each layer equals.

（4）For waste in bags, barrel etc containers

Order Numbers each container, using a random number table method in HJ/T 20 extracted (N +1) / 3 (rounded to the nearest integer) bags as the sampling unit to take samples. According to solid waste characters use long shovel type sampler, sleeve type sampler or probe sample respectively. Open the vessel mouth, each container is divided into the upper (1/6 depths), central (1/2 depths), and at the bottom (5/6 depths) three layer to take samples; number of samples each layer equals. If there is only one container, the container should be divided into three layers according to the above methods, each layer take two samples.

(5) Liquid waste

According to the size of the container sample with glass sampling pipe or heavy bottles of sampler. Blend liquid waste in container (containing volatile components of liquid waste except) then open the container, slow insert liquid surface to the bottom of the container with sampling pipe or heavy glass bottle sampler from the center of the vessel mouth; When the sampling tube /

sampler is filled with liquid waste, slowly raised, and inject the sample into the sample container.

In order to ensure does not cause secondary pollution, take the necessary personal security measures in the sampling process.

4 Sample pretreatment and preservation

The samples should be saved with portable refrigerator or dry ice and transport to the laboratory as soon as possible. If the samples cannot be analyzed in the short term, store below 4 ℃. The sample should not be more than 30 days below -10 ℃.

The preparation of sample is to make in accordance with the requirements in HJ / T 20, prohibit the use of plastics, rubber and other materials. The prepared samples were sealed in containers (containers stored in the sample should not produce adsorption and sample deterioration), labeled for spare. Those should be indicated on the label: number, name of the waste, sampling locations, batch number, samples, and sample preparation time.

5 Sample Analysis

Sample extraction, purification and instrumental analysis reference to the standard method of U.S.A. EPA for the POPs analysis and determination, there are: EPA Method 505，EPA Method 508，EPA Method 608，EPA Method 617，EPA Method 625，EPA Method 8080A，EPA Method 8081，EPA Method 8250.

6 Quality control and quality assurance

(1) In the process of sample collection, preservation, transportation, transfer, a complete management program should be established. In order to avoid sampling equipment, and external environmental conditions and other factors affect the sample, quality assurance and quality control process should be focused on in the field sampling.

(2) To prevent cross-contamination in the sampling process, sampling tools should be reused cleaning.

(3) Sampling for quality control in collection site is an important means of field sampling and

laboratory quality control. Samples of quality control generally include parallel samples, blank samples, transport samples and washing blank control sample, sample of quality control can be analyzed to implement the quality control at different stages from sample to sample transport, storage and data analysis.

(4) Other technical requirements for quality control and quality assurance reference to the HJ / T 298 related.

(5) Quality control of POPs analysis reference to EPA provisions of POPs analytical quality control methods.

7 Test results

(1) In the detection process, if the detection results of one kind of contaminant (containing different with the Department of thing's, fellow objects of and calculation) ≥ 50 mg / kg or ≥ 50 mg / L, the waste can be determined with POPs waste characteristics.

(2) When the waste contains a variety of POPs, calculate the total content of all POPs substances.

(3) When the waste in a different state (such as liquid, solid, and semi-solid) mixed, measure the POPs content in waste according to the different forms respectively.

(4) After the waste samples testing， if the test results ≥ 50 mg / kg, or 50 mg / L, the number of samples greater than or equal to the lower limit of the number of copies of sample exceeds the standard in Table 2, This waste can be determined to belong to the pops waste.

Table 2 a normal tests sampling plan

Sample number（count）	The lower limit of the number of copies of sample exceeds the standard
5	1
8	3
13	4
20	6
32	8
50	11
80	15
100	22

(5) If the number of the solid waste samples taken doesn’t match with the sample number in Table 2 ， choose the smaller number of samples closest to the actual number of samples, then

judge by table 2.

(6) Other discrimination with reference to HJ / T 298-2007.