





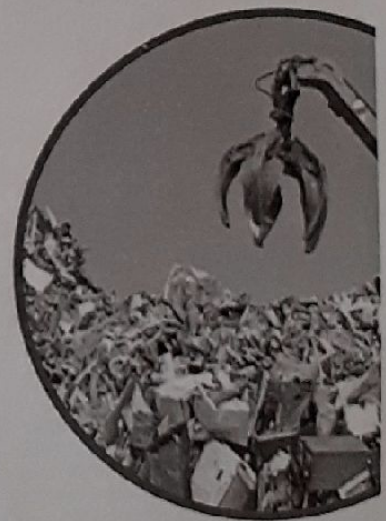
## Legislation on the state of sanitary cleaning of populated areas in the climatic conditions of Uzbekistan and the cleaning methods

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### Introduction

According to the World Bank, at the beginning of the third millennium, 2.9 billion people live in the world's cities and they are generated 640 million tons of municipal solid waste annually. Currently, 1.3 billion tons of waste are produced per year from 3 billion people, and by 2025 this figure will reach 2.2 billion tons.





# METHODS OF DESTRUCTION OF MSW IN COUNTRIES OF THE WORLD

Country	Burning	Collection in landfills	Composting	Others
Switzerland	80	18	2	-
Japan	72	24.5	1.5	2
Sweden	56	34	9.9	0.1
Belgium	47	44	9	-
Netherlands	40	44	15	1
France	36	47	8	9
Denmark	32	64	4	-
Germany	28	69	2	1
Italy	18.5	35	5.5	4.1
USA	8	82	-	10
Canada	6	93	-	1
Great Britain	2	2	98	-
Russia and the CIS	5	95	-	-

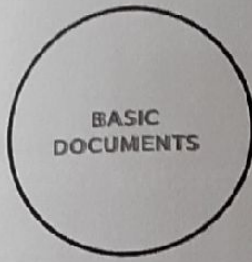


Municipal solid waste (MSW) - substances (mixtures of substances), - products of human activity, formed in the process of consumption, recognized as unsuitable for further use directly in the places of their formation or have lost their consumer properties.

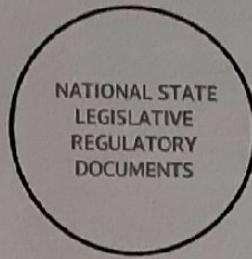
In the process of life, a person tends to leave behind all kinds of garbage and various waste, the amount of which increases every year by 3%, and the area occupied by waste increases by 250 thousand hectares annually.

## LEGAL REGULATIONS REGARDING WASTE

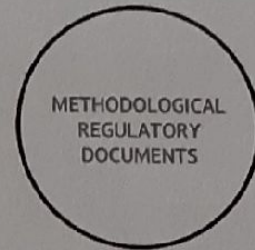
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1. Constitution of the Republic of Uzbekistan dated December 8, 1992
2. Law of the Republic of Uzbekistan "Land Code"
3. Law of the Republic of Uzbekistan "On sanitary and epidemiological welfare of the population"



1. San R and N "Rules for the registration, classification, collection and disposal of industrial waste"
2. San R and N "Hygienic classifier for the hazardousness of industrial waste in the climatic conditions of Uzbekistan".
3. San R and N "Sanitary rules and norms for sanitary cleaning of populated areas from solid waste in the conditions of the Republic of Uzbekistan".
4. SanR and N "MAC of harmful exogenous substances in the soil"
5. San R and N "Sanitary rules and norms for the collection, storage and disposal of waste in healthcare facilities of the Republic".

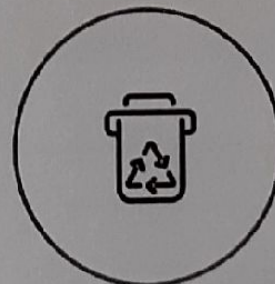
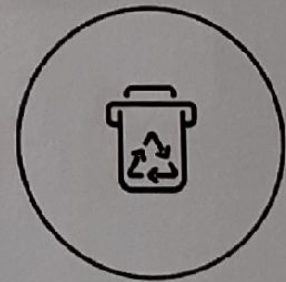
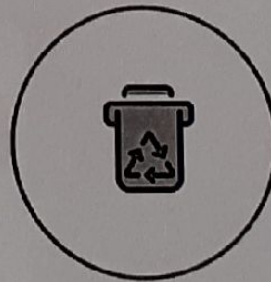


1. Guidelines for the sanitary cleaning of populated areas from solid waste
2. Guidelines for the determination of harmful exogenous substances in the soil

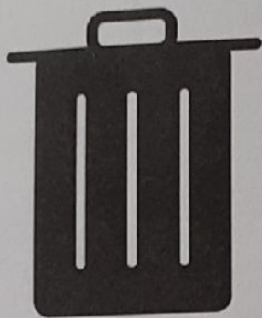
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In accordance with the decision of the mayor of the city of Tashkent dated July 7, 2012:

1. For plastic waste - a blue bag - various plastic products, leftover dishes, cans with non-tin.
2. For paper waste - white bag - paper, cardboard and other paper products
3. For biowaste - a yellow bag - in a bag of food products - put a variety of food waste, melons and leftover vegetable products
4. For other waste - a black bag - household products that are not included in items 1, 2 and 3 are placed in a black package







## Standards for the formation (collection) of solid waste in the Republic of Uzbekistan

- ✓ In winter - 355.6 kg per year
- ✓ In the spring season for the year 587.6 kg
- ✓ Summer - 434.0 kg per year
- ✓ Autumn per year 406.0 kg

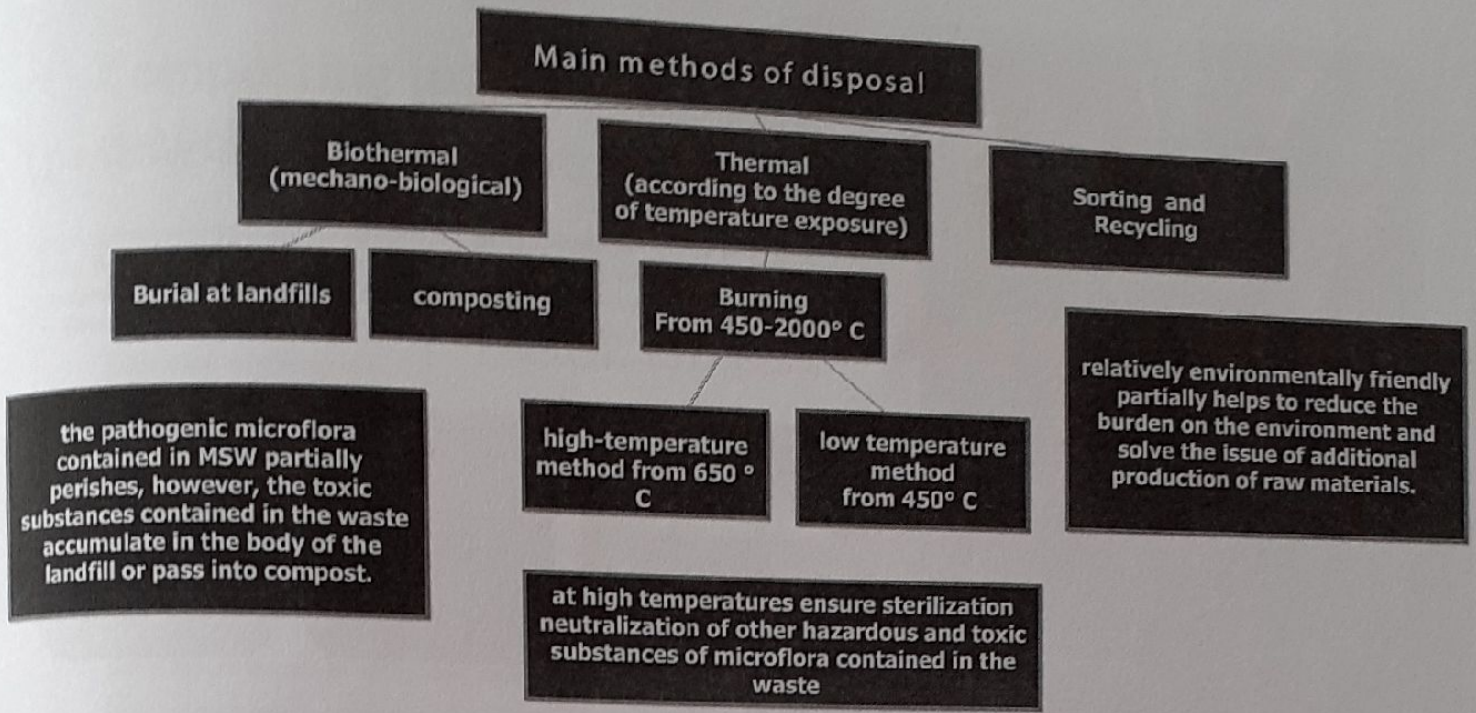


## DISPOSAL METHODS

From the point of view of the natural sciences, any substance can theoretically be used in one way or another. The natural limitation of use is the economic. Utilization (lat. utilis - useful) - changing waste materials to complete disappearance or modification of the structure, without reuse.



## Classification of disposal methods



### Basic disposal methods

At the moment, there are several ways to solve the problem of waste disposal from human habitation.



1. Storage in landfills →



2. Composting →



3. Waste incineration →



4. Recycling and waste sorting →



## Composting (natural recycling)

It consists in the natural biological decomposition (rotting) of organic matter. The method is used for the processing of organic waste - primarily of plant origin (leaves, branches, mowed grass). The product of composting is organic fertilizer - compost (humus) that resembles soil that can be used for fertilizer (mulch) or biofuel (raw compost).



### Advantages and disadvantages

Advantages: ●

reducing the volume of waste;  
recycling of organic waste;

Advantages: ●

partial disinfection of waste;  
death of microflora  
contained in MSW;

Advantages: ●

obtaining fertilizer and  
biofuel.



Disadvantages: ●

the presence of elements that  
pollute the soil, spores of  
pathogenic bacteria, heavy metals;

Disadvantages: ●

Requires disposal of residues;  
release of gaseous products of  
waste processing, sometimes with  
an unpleasant odor;

Disadvantages: ●

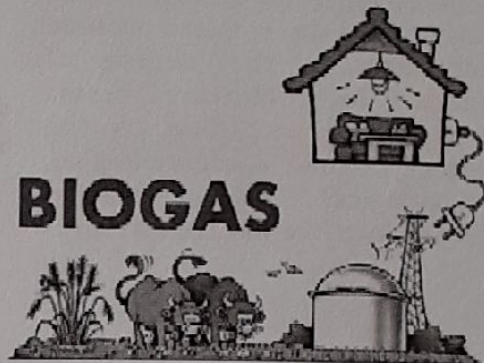
lack of demand for compost;  
Not suitable for unseparated  
municipal waste.



## Composting (natural recycling)

composting does not ensure the bacteriological and epidemiological safety of processed products; application depends on the possibilities of using compost and on energy prices;

The use of biogas as an energy resource is limited by the presence of harmful impurities, which, when burned, lead to the appearance of toxic substances in the combustion products, and this requires the use of purification systems, which reduces the economic efficiency of this technology. This is more of a volume reduction method than a disposal method, as metal, glass, plastic, processed paper are not subject to composting;



**A person responsible on the basis of an order for organizational work on the collection, storage and handling of waste is appointed in the medical facility**

.01

If there is an epidemiologist staff in the health facility, then the epidemiologist

.02

Head nurse.

.03

Assistant to the Chief Physician for General Affairs



# Types of healthcare facility waste

Depending on the profile, regardless of the specialty of all hospital waste, waste is divided according to the degree of danger. All healthcare wastes are divided according to the degree of their epidemiological, toxicological and radiation hazard into five hazard classes:

- **Class A.**  
Non-hazardous waste of medical institutions
- **Class B**  
Hazardous (risky) waste from medical institutions.
- **Class C**  
Extremely hazardous waste from medical institutions.
- **Class D**  
Waste from medical institutions, similar in composition to industrial waste.
- **Class E**  
Radioactive waste from medical institutions

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## Class A waste

.01

Ward waste of departments (except for infectious, dermatovenerological, phthisiatric, mycological) healthcare facilities;

.03

Central catering units, buffets of departments (except for infectious, dermatovenerological, phthisiatric, mycological);

.02

Administrative and utility rooms of health facilities;

.04

Outside the territory of the medical institution.



## Class B waste

- 1 places of education: operating;
- 2 resuscitation; procedural, dressing and other manipulation and diagnostic rooms of healthcare facilities;
- 3 infectious, dermatovenerological departments of healthcare facilities;
- 4 medical and pathological laboratories;
- 5 laboratories working with microorganisms of 3-4 pathogenicity groups;
- 6 vivariums, veterinary clinics.

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## Class C waste

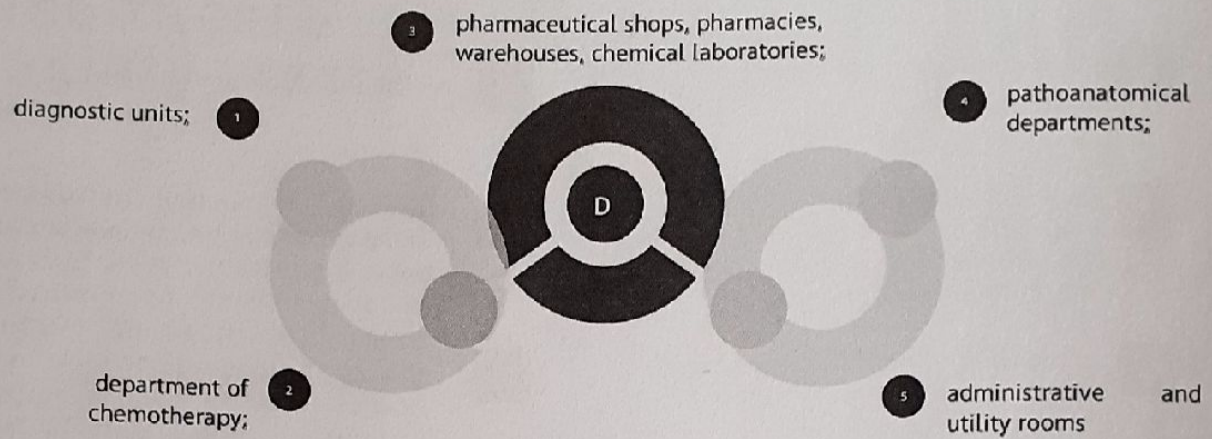
### Places of education:

1. subdivisions for patients with especially dangerous and quarantine infections;
2. laboratories working with microorganisms of 1-2 pathogenicity groups;
3. phthisiatric and mycological clinics (departments).

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## Class D waste



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## Class E waste

Places of education:

1. diagnostic laboratories (departments);

2. radioisotope laboratories and X-ray rooms.



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## Terms of temporary storage and disposal of waste

- 1 Open storage and contact of personnel with waste of classes B, C, D outside the premises of the medical unit is not allowed.
- 2 Class A waste is disinfected in landfills
- 3 Waste of classes B and C is neutralized in special places.
- 4 Storage and transportation of waste on the territory of a medical institution of classes A, B, C is allowed only in sealed reusable containers.
- 5 Class D waste is neutralized by such methods as toxic substances.

**According to SSt, waste from industrial enterprises is divided into groups according to toxicity and danger:**

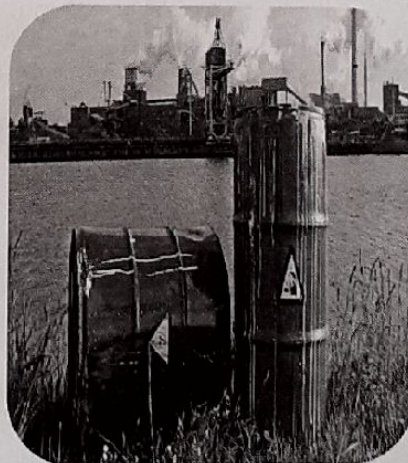
1. Extremely dangerous.
2. Very dangerous
3. Moderately dangerous
4. Low-dangerous.





if the waste contains mercury, arsenic, chromium, benzpyrene and other similar life-threatening chemicals, then such waste is classified as type 1 in terms of its hazard.

From the point of view of its danger, if the composition of the waste includes copper chloride, chlorinated nickel, trioxide propellant, nitrogen salt with lead, etc. then it belongs to the 2nd type.







Waste from the enterprise - in the trash

copper sulfate, the interaction of copper with salt salts, nickel with chlorine salt, lead oxide, carbon tetrachloride, according to the degree of their impact on the human body, are included in the 3rd type.

The composition of the waste includes phosphate, manganese, sulfate salts of zinc - 4-type.

Industrial waste is divided into 2 groups:



1. Industrial waste which can be used.
2. Industrial waste which cannot be used.