**SanPiN 2.1.4.1074-01 Drinking water. Hygienic requirements for water quality of centralized drinking water supply systems. Quality control. Hygienic requirements for ensuring the safety of hot water systems**

THE MAIN STATE SANITARY DOCTOR   
OF THE RUSSIAN FEDERATION   
  
DECISION   
  
No. 24 of September 26, 2001   
  
  
On the Enactment of Sanitary Regulations

(as amended on June 28, 2010)

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     Document with the changes introduced: the   
     [Resolution of the Chief State Sanitary Doctor of the Russian Federation of April 7, 2009 No. 20](http://docs.cntd.ru/document/902156582)(Rossiyskaya Gazeta, No. 92, 22.05.2009) (effective from September 1, 2009);   
     [Decision of the Chief State Sanitary Doctor of the Russian Federation No. 10 of February 25, 2010](http://docs.cntd.ru/document/902203370)(Bulletin of normative acts of federal executive bodies, No. 14, April 5, 2010) (effective from May 1, 2010);   
     [Decree of the Chief State Sanitary Doctor of the Russian Federation of June 28, 2010 No. 74](http://docs.cntd.ru/document/902225825)(Bulletin of regulatory enactments of federal executive bodies, No. 34, August 23 [, 2010](http://docs.cntd.ru/document/902225825) ).  
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     On the basis of the [Federal Law "On Sanitary and Epidemiological Welfare of the Population" \* of March 30, 1999 No. 52-FZ](http://docs.cntd.ru/document/901729631) and the ["Regulations on State Sanitary and Epidemiological Regulation"](http://docs.cntd.ru/document/901765645) \*\* approved by the [Decree of the Government of the Russian Federation No. 554 of July 24, 2000](http://docs.cntd.ru/document/901765645) ,

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\* Collection of the legislation of the Russian Federation, 1999, N 14, st.1650.   
       
     \*\* Collection of the legislation of the Russian Federation, 2000, No. 31, art. 3295.

       
I hereby resolve:

1. To implement the [Sanitary and Epidemiological Rules and Norms "Drinking Water: Hygienic Requirements for Water Quality of Centralized Drinking Water Supply Systems Quality Control SanPiN 2.1.4.1074-01"](http://docs.cntd.ru/document/901798042) approved by the Chief State Sanitary Doctor of the Russian Federation on 26.09.2001, from 1 January 2002.

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     [Resolution of the Chief State Sanitary Doctor of the Russian Federation No. 20 on April 7, 2009, the](http://docs.cntd.ru/document/902156582)name of the [sanitary and epidemiological rules and standards "Drinking water: Hygienic requirements to the quality of water of centralized drinking water supply systems: quality control"](http://docs.cntd.ru/document/901798042) was updated as of September 1, 2009: Drinking water - Hygienic requirements for water quality of centralized drinking water supply systems - Quality control - Hygienic requirements for providing safety of hot water systems ".   
     - Note of the database manufacturer.

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GG Onishchenko

Registered   
with the Ministry of Justice of the   
Russian Federation   
on October 31, 2001,   
registration No. 3011

Sanitary-epidemiological rules and standards "Drinking water - Hygienic requirements for water quality of centralized drinking water supply systems - Quality control - Hygienic requirements for ensuring the safety of hot ..."

APPROVED by the   
Chief State Sanitary   
Doctor of the Russian Federation,   
First Deputy   
Minister of Health of the   
Russian Federation   
G. G. Onishchenko   
, September 26, 2001

2.1.4. DRINKING WATER AND WATER SUPPLY OF BUILT-   
  
IN PLACES Drinking water. Hygienic requirements for water quality of centralized drinking water supply systems. Quality control. Hygienic requirements for ensuring the safety of hot water systems \*   
  
Sanitary and epidemiological rules and standards   
SanPiN 2.1.4.1074-01

(as amended on June 28, 2010)

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     The document takes into account:   
     [Amendment of April 7, 2009](http://docs.cntd.ru/document/902156582) ( [Resolution of the Chief State Sanitary Doctor of the Russian Federation of April 7, 2009 No. 20](http://docs.cntd.ru/document/902156582) ) (effective from September 1, 2009);   
     [Change No. 2 of February 25, 2010](http://docs.cntd.ru/document/902203370) ( [Resolution of the Chief State Sanitary Doctor of the Russian Federation No. 10 of February 25, 2010](http://docs.cntd.ru/document/902203370) ) (effective from May 1, 2010);   
     [Change No. 3 of June 28, 2010](http://docs.cntd.ru/document/902225825) ( [Resolution of the Chief State Sanitary Doctor of the Russian Federation No. 74 of June 28, 2010](http://docs.cntd.ru/document/902225825) ).  
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     \* Name in the wording put into effect on September 1, 2009 by the [Resolution of the Chief State Sanitary Doctor of the Russian Federation of April 7, 2009 No. 20](http://docs.cntd.ru/document/902156582) ..

1 area of ​​use

1.1. Sanitary-epidemiological rules and norms "Drinking water: Hygienic requirements for water quality of centralized drinking water supply systems - Quality control" (hereinafter - Sanitary rules) establish hygienic requirements for the quality of drinking water, as well as the rules for monitoring the quality of water produced and supplied by centralized drinking water systems water supply of populated areas (hereinafter - water supply systems).

1.2. These Sanitary Rules are developed on the basis of the [Federal Law "On Sanitary and Epidemiological Well-Being of the Population"](http://docs.cntd.ru/document/901729631) , the [Fundamental Principles of the Russian Federation Legislation on the Protection of Health of Citizens](http://docs.cntd.ru/document/9005413) "\*, the [Regulations on State Sanitary and Epidemiological Regulations](http://docs.cntd.ru/document/901765645) and the [Regulations on the State Sanitary and Epidemiological Service of the Russian Federation](http://docs.cntd.ru/document/901765645) ." \*\*

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\* Gazette of the Congress of People's Deputies of the Russian Federation and the Supreme Council of the Russian Federation, 1993, No. 33, st. 1318.   
       
     \*\* Collection of the legislation of the Russian Federation, 2000, No. 31, art. 3295.  
     

1.3. Sanitary rules are intended for individual entrepreneurs and legal entities whose activities are related to the design, construction, operation of water supply systems and providing the population with drinking water, as well as for bodies and institutions that carry out state sanitary and epidemiological surveillance.

1.4. Sanitary rules are applied to water supplied by water supply systems and intended for consumption by the population for drinking and domestic purposes, for use in the processing of food raw materials and food production, their storage and trade, and for the production of products requiring drinking water quality.

1.5. Hygienic requirements to the quality of drinking water for non-centralized water supply, to the quality of drinking water produced by autonomous water supply systems, individual devices for water preparation, and also sold to the population in bottles or containers, are established by other sanitary rules and regulations.  
     

2. General Provisions

2.1. The requirements of these Sanitary Rules must be met when developing state standards, building codes and regulations in the field of drinking water supply of the population, design and technical documentation of water supply systems, as well as in the construction and operation of water supply systems.

2.2. The quality of drinking water supplied by the water supply system must comply with the requirements of these Sanitary Rules.

2.3. Indicators characterizing the regional characteristics of the chemical composition of drinking water are set individually for each water supply system in accordance with the rules specified in [Annex 1](http://docs.cntd.ru/document/901798042) .

2.4. On the basis of the requirements of these Sanitary Rules, an individual entrepreneur or a legal entity that operates a water supply system develops a working program for the production control of water quality (hereinafter - the work program) in accordance with the rules specified in [Annex 1](http://docs.cntd.ru/document/901798042) . The work program is coordinated with the Center for State Sanitary and Epidemiological Surveillance in the city or region (hereinafter - the Center for State Sanitary Epidemiological Supervision) and approved in the relevant territory in the established order.

2.5. If an emergency situation or technical disturbance occurs at facilities and structures of the water supply system that lead or can lead to a deterioration in the quality of drinking water and the conditions for water supply to the population, an individual entrepreneur or legal entity operating a water supply system must immediately take measures to eliminate them and inform this is the center of state sanitary epidemiological surveillance.   
       
     An individual entrepreneur or a legal entity that carries out industrial quality control of drinking water is also required to immediately inform the center of state sanitary epidemiological supervision about each result of a laboratory examination of water samples that does not meet hygienic standards.

2.6. In cases involving natural phenomena that can not be anticipated in advance, or with emergency situations, the elimination of which can not be carried out immediately, temporary deviations from hygienic standards of drinking water quality can be allowed only in terms of the chemical composition that affects the organoleptic properties .

2.6.1. Deviations from hygiene standards are allowed when the following conditions are met:

- providing the population with drinking water can not be achieved in any other way;   
       
     - compliance with the maximum permissible deviations from hygienic standards agreed with the center of state sanitary and epidemiological supervision for a limited period of time;   
       
     - maximum limitation of the validity of the derogations;   
       
     - the absence of a threat to the health of the population during the period of the deviations;   
       
     - Providing information to the public about the introduction of deviations and the timing of their actions, the lack of risk to health, as well as recommendations for the use of drinking water.

2.6.2. The decision on a temporary deviation from hygienic standards for the quality of drinking water is adopted in accordance with the legislation of the Russian Federation.

2.6.3. Simultaneously with the decision on the temporary withdrawal from hygienic standards, a plan of measures to ensure water quality that meets hygiene standards is approved, including the work schedule, timing and amounts of funding.

2.7. The supply of drinking water to the population is prohibited or its use is suspended in the following cases:   
       
     - in the established period of time, temporary deviations from hygienic standards have not eliminated the causes causing deterioration in the quality of drinking water;   
       
     - the water supply system does not ensure the production and supply of drinking water to the public, the quality of which meets the requirements of these Sanitary Rules, and therefore there is a real danger to public health.

2.7.1. The decision to prohibit or suspend the use of drinking water by a population from a particular water supply system is made by the local government body on the basis of a decision of the Chief State Sanitary Doctor for the relevant territory on the basis of an assessment of the health risks and risks associated with both further consumption of water that does not meet hygienic standards and with the termination or suspension of its use for drinking and domestic purposes.

2.7.2. If a decision is made to ban or suspend the use of drinking water by organizations providing water supply system operation, they are developed in agreement with the state sanitary epidemiological supervision center and measures are taken to identify and eliminate the causes of deterioration in its quality and provide the population with drinking water that meets the requirements of the Sanitary Rules.

2.7.3. The population is informed of the decision to prohibit or suspend the use of drinking water, its quality, activities, as well as recommendations on actions in this situation in accordance with the established procedure.

3. Hygienic requirements and standards of drinking water quality

3.1. Drinking water should be safe in epidemic and radiation respect, harmless in chemical composition and have favorable organoleptic properties.

3.2. The quality of drinking water must meet hygienic standards before it enters the distribution network, as well as at the points of water extraction of the external and internal water supply network.

3.3. The safety of drinking water in the epidemic relation is determined by its compliance with the standards for microbiological and parasitological indicators, presented in Table 1.  
     

Table 1

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Indicators | Units | Standards |
| Thermotolerant coliforms | The number of bacteria in 100 ml | Absence of |
| Common coliform bacteria | The number of bacteria in 100 ml | Absence of |
| Total microbial number | The number of colony forming bacteria in 1 ml | Not more than 50 |
| Coliforms | The number of plaque forming units (PFU) in 100 ml | Absence of |
| Spores of sulfide-reducing clostridia | Number of spores in 20 ml | Absence of |
| Cysts of lamblia | The number of cysts in 50 liters | Absence of |

       
     Notes:

1) In the determination, a three-time study of 100 ml of a sample of water is carried out.

2) The excess of the standard is not allowed in 95% of the samples taken at the points of water extraction of the external and internal water supply network within 12 months, with the number of samples being examined not less than 100 per year.

3) The determination is made only in water supply systems from surface sources before water is supplied to the distribution network.

4) The determination is made when assessing the effectiveness of water treatment technology.

3.3.1. In the study of microbiological indicators of drinking water quality, determination of thermotolerant coliform bacteria, common coliform bacteria, total microbial number and coliphages is carried out in each sample.

3.3.2. When water is detected in drinking water, thermotolerant coliform bacteria, and (or) common coliform bacteria and (or) coliphages are determined in water samples repeatedly taken in an emergency. In such cases, to determine the causes of pollution, the determination of chlorides, ammonium nitrogen, nitrates and nitrites is simultaneously carried out.

3.3.3. If a total coliform bacteria of more than 2 in 100 ml and / or thermotolerant coliform bacteria and / or coliphage is detected in the repeated water samples, water samples are examined to determine pathogenic bacteria of the intestinal group and / or enteroviruses.

3.3.4. Studies of drinking water for the presence of pathogenic bacteria of the intestinal group and enteroviruses are also conducted according to epidemiological indications by the decision of the state sanitary epidemiological supervision center.

3.3.5. Water tests for the presence of pathogenic microorganisms can only be carried out in laboratories that have a sanitary and epidemiological report on the compliance of the conditions for the performance of work with sanitary rules and a license for activities related to the use of pathogens of infectious diseases.

3.4. The harmlessness of drinking water in terms of chemical composition is determined by its compliance with the regulations for:

3.4.1. generalized indicators and content of harmful chemicals most commonly found in natural waters on the territory of the Russian Federation, as well as anthropogenic substances of global spread (Table 2);

3.4.2. the content of harmful chemicals entering and forming in the water during its processing in the water supply system [(Table 3)](http://docs.cntd.ru/document/901798042) ;

3.4.3. To the content of harmful chemicals entering the sources of water supply as a result of human economic activity [(Appendix 2)](http://docs.cntd.ru/document/901798042) .  
     

table 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| Indicators | Units | Norms (maximum allowable concentrations (MPC), not more than | | Harmfulness index | Hazard Class |
| 1 | 2 | 3 | | 4 | 5 |
| Generalized indicators | | | | | |
| The hydrogen index | units pH | within 6-9 | |  |  |
| Total mineralization (dry residue) | mg / l | 1000 (1500) | |  |  |
| Total stiffness | mg-equiv. / l | 7.0 (10) | |  |  |
| Oxidizing property, permanganate | mg / l | 5.0 | |  |  |
| Petroleum products, in total | mg / l | 0.1 | |  |  |
| Surfactants (surfactants), anionic | mg / l | 0.5 | |  |  |
| Phenolic index | mg / l | 0.25 | |  |  |
| Inorganic substances | | | | | |
| Aluminum (Al ) | mg / l | | 0.5 | s.-t. | 2 |
| Barium (Ba ) | - "- | | 0.1 | - "- | 2 |
| Beryllium (Be ) | - "- | | 0.0002 | - "- | 1 |
| Boron (B, total) | - "- | | 0.5 | - "- | 2 |
| Iron (Fe, total) | - "- | | 0.3 (1.0) | org. | 3 |
| Cadmium (Cd, total) | - "- | | 0,001 | s.-t. | 2 |
| Manganese (Mn, total) | - "- | | 0.1 (0.5) | org. | 3 |
| Copper (Cu, total) | - "- | | 1.0 | - "- | 3 |
| Molybdenum (Mo, total) | - "- | | 0.25 | s.-t. | 2 |
| Arsenic (As, total) | - "- | | 0.05 | s.-t. | 2 |
| Nickel (Ni, total) | mg / l | | 0.1 | s.-t. | 3 |
| Nitrates (by ) | - "- | | 45 | s.-t. | 3 |
| Mercury (Hg, total) | - "- | | 0.0005 | s.-t. | 1 |
| Lead (Pb, total) | - "- | | 0.03 | - "- | 2 |
| Selenium (Se, total) | - "- | | 0.01 | - "- | 2 |
| Strontium (Sr ) | - "- | | 7.0 | - "- | 2 |
| Sulphates (SO ) | - "- | | 500 | org. | 4 |
| Fluorides (F ) |  | |  |  |  |
| for climatic regions | | | | | |
| - I and II | - "- | | 1.5 | s.-t. | 2 |
| - III | - "- | | 1.2 |  | 2 |
| Chlorides (Cl ) | - "- | | 350 | org. | 4 |
| Chromium (Cr ) | - "- | | 0.05 | s.-t. | 3 |
| Cyanides (CN ") | - "- | | 0.035 | - "- | 2 |
| Zinc (Zn ) | - "- | | 5.0 | org. | 3 |
| Organic substances | | | | | |
| -HCCH (lindane) | - "- | | 0.002 | s.-t. | 1 |
| DDT (sum of isomers) | - "- | | 0.002 | - "- | 2 |
| 2,4-D | - "- | | 0.03 | - "- | 2 |

       
     Notes:

1) The limiting sign of the harmfulness of the substance, according to which the standard is established: "d.-t. - Sanitary-toxicological, "org." - organoleptic.

2) The value indicated in parentheses can be determined by the decision of the Chief State Sanitary Doctor for the relevant territory for a particular water supply system on the basis of an assessment of the sanitary and epidemiological situation in the village and the water treatment technology used.

3) The guidelines are adopted in accordance with WHO recommendations.  
     

Table 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Indicators | Units | Norms (maximum allowable concentrations (MPC), not more than | Harmfulness index | Hazard Class |
| Chlorine |  |  |  |  |
| - residual free | mg / l | in the range 0.3-0.5 | org. | 3 |
| - Residual related | - "- | within the limits of 0,8-1,2 | - "- | 3 |
| Chloroform (with chlorination of water) | - "- | 0.2 | s.-t. | 2 |
| Ozone residual | - "- | 0.3 | org. |  |
| Formaldehyde (with ozonation of water) | - "- | 0.05 | s.-t. | 2 |
| Polyacrylamide | - "- | 2.0 | - "- | 2 |
| Activated silicic acid (in Si) | - "- | 10 | - "- | 2 |
| Polyphosphates (by ) | - | 3.5 | org. | 3 |
| Residual amounts of aluminum- and iron-containing coagulants | - "- | see the indicators "Aluminum", "Iron" of Table 2 |  |  |

       
     Notes:

1) When disinfection of water with free chlorine, the time of its contact with water must be at least 30 minutes, bound by chlorine - not less than 60 minutes.   
       
     The content of residual chlorine is monitored before the water is supplied to the distribution network.   
       
     With the simultaneous presence of free and bound chlorine in water, their total concentration should not exceed 1.2 mg / l.   
       
     In some cases, in agreement with the center gossanepidnadzora may be allowed an increased concentration of chlorine in drinking water.

2) The standard is adopted in accordance with the recommendations of WHO.

3) The residual ozone is monitored after the mixing chamber with a contact time of at least 12 minutes.

3.4.4. If several chemical substances belonging to the 1st and 2nd hazard classes are found in drinking water and rationed according to the sanitary-toxicological sign of harmfulness, the sum of the ratios of the detected concentrations of each of them in the water to the value of its MPC should not be more than 1. Calculation is carried out according to the formula: where , , - concentrations of individual chemicals 1 and 2 hazard class: fact. (actual) and additional. (admissible).  
     ***SanPiN 2.1.4.1074-01 Drinking water.  Hygienic requirements for water quality of centralized drinking water supply systems.  Quality control.  Hygienic requirements for ensuring the safety of hot water systems***     

3.5. Favorable organoleptic properties of water are determined by its compliance with the standards specified in Table 4, as well as standards for the content of substances that affect the organoleptic properties of water, given in Tables 2 and 3 and in [Annex 2](http://docs.cntd.ru/document/901798042) .  
     

Table 4

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Indicators | Units | Norms, not more than |
| Smell | points | 2 |
| The aftertaste | - "- | 2 |
| Color | degrees | 20 (35) |
| Turbidity | EMF (haze unit for formazine) or mg / l (by kaolin) | 2.6 (3.5)  1.5 (2) |

       
     Note:   
       
     The value indicated in parentheses can be determined by the decision of the Chief State Sanitary Doctor for the relevant territory for a particular water supply system on the basis of an assessment of the sanitary and epidemiological situation in the settlement and the water treatment technology used.

3.5.1. It is not allowed to have aquatic organisms and surface films visible to the naked eye in drinking water.

3.6. Radiation safety of drinking water is determined by its compliance with radiation safety standards according to the indicators presented in Table 5.  
     

Table 5

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Indicators | Units | Radiation safety indicators |
| Summary indicators | | |
| Specific total   -activity | Bq / kg | 0.2 |
| Specific total  -activity | Bq / kg | 1.0 |
| Radionuclides | | |
| Radon ( Rn) | Bq / kg | 60 |
| radionuclides | units | 1.0 |

     Notes:   
       
     If the indicators are exceeded, the content of radionuclides in water is analyzed.   
       
     The list of radionuclides to be determined in water is established in accordance with sanitary legislation. Determination of radon for underground sources of water supply is mandatory.   
       
     When the combined presence of several radionuclides in water, the condition (A / HC ) 1 should be fulfilled , where A is the specific activity of the i-th radionuclide in water; HC - the appropriate level of intervention in accordance with [Annex 2a to SanPiN 2.6.1.2523-09 \* "Radiation safety standards (NRB-99/2009)"](http://docs.cntd.ru/document/902170553) . If the condition is not fulfilled, the water assessment shall be carried out in accordance with the sanitary legislation. "   
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
     \* Registered by the Ministry of Justice of Russia on August 14, 2009, registration number 14534.        
     (Paragraph 3.6 as amended by May 1, 2010 by [Amendment No. 2 of February 25, 2010.](http://docs.cntd.ru/document/902203370) - See the [previous edition](http://docs.cntd.ru/document/902212546)

[July](http://docs.cntd.ru/document/902212546) )

3.6.1. The item is excluded from May 1, 2010 by the [Amendment No. 2 of February 25, 2010](http://docs.cntd.ru/document/902203370) ..  
     

4. Drinking water quality control

4.1. In accordance with the [Federal Law "On Sanitary and Epidemiological Well-being of the Population"](http://docs.cntd.ru/document/901729631) , the state sanitary-epidemiological supervision and production control should be carried out for the quality of drinking water.

4.2. The production quality control of drinking water is provided by an individual entrepreneur or a legal entity that operates a water supply system, according to a work program.   
       
     An individual entrepreneur or legal entity that operates a water supply system, in accordance with the work program, constantly monitors the quality of water in the places of water intake, before entering the distribution network, and also at the points of water extraction of the external and internal water supply network.

4.3. The number and frequency of water samples in water intake sites selected for laboratory testing shall be established taking into account the requirements specified in Table 6.  
     

Table 6

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Types of indicators | Number of samples within one year, not less than | |
|  | For underground sources | For surface sources |
| Microbiological | 4 (by seasons of the year) | 12 (monthly) |
| Parasitologic | are not held | - "- |
| Organoleptic | 4 (by seasons of the year) | 12 (monthly) |
| Generalized indicators | - "- | - "- |
| Inorganic and organic substances | 1 | 4 (by seasons of the year) |
| Radiological | 1 | 1 |

4.4. The types of indicators to be determined and the number of samples of drinking water to be examined before entering the distribution network are set taking into account the requirements specified in Table 7.  
     

Table 7

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| Types of indicators | Number of samples within one year, not less than | | | | |
|  | For underground sources | | | For surface sources | |
|  | The population provided by water from this water supply system, thousand people. | | | | |
|  | up to 20 | 20-100 | Over 100 | up to 100 | Over 100 |
| Microbiological | 50 | 150 | 365 | 365 | 365 |
| Parasitologic | are not held | | | 12 | 12 |
| Organoleptic | 50 | 150 | 365 | 365 | 365 |
| Generalized indicators | 4 | 6th | 12 | 12 | 24 |
| Inorganic and organic substances | 1 | 1 | 1 | 4 | 12 |
| Indicators associated with water treatment technology | Residual chlorine, residual ozone - at least once per hour, the rest of the reagents - at least once a shift | | | | |
| Radiological | 1 | 1 | 1 | 1 | 1 |

       
     Notes:

1. The following frequency of sampling of water is accepted:

1) weekly, 2) three times a week, 3) daily, 4) once a season, 5) once in two months, 6) monthly, 7) twice a month.

2. In the absence of water disinfection on the aqueduct from underground sources, providing water to a population of up to 20 thousand people, sampling for research on microbiological and organoleptic indicators is conducted at least once a month.

3. For the period of floods and emergencies, an enhanced regime of drinking water quality control should be established in agreement with the center of state sanitary epidemiological supervision.

4.5. The production quality control of drinking water in the distribution water supply network is carried out according to microbiological and organoleptic parameters with the frequency indicated in Table 8.  
     

Table 8

|  |  |
| --- | --- |
|  |  |
| Number of served population, thousand people | Number of samples per month |
| to 10 | 2 |
| 10-20 | 10 |
| 20-50 | thirty |
| 50-100 | 100 |
| more than 100 | 100 + 1 sample for every 5 thousand people, over 100 thousand people |

       
     Note:   
       
     The samples do not include mandatory control samples after repairs and other technical works on the distribution network.

4.6. Sampling in the distribution network is carried out from street water-pumping devices on the most elevated and dead-end sections of it, as well as from the cranes of internal water supply networks of all houses that have swap and local water tanks.

4.7. The production quality control of drinking water in accordance with the work program is carried out by laboratories of individual entrepreneurs and legal entities operating water supply systems, or in accordance with contracts with laboratories of other organizations accredited in accordance with the established procedure for the right to perform drinking water quality tests.

4.8. State sanitary and epidemiological surveillance of drinking water quality is carried out by the bodies and institutions of the State Sanitary and Epidemiological Service in accordance with the regulatory and methodological documents of the State Sanitary and Epidemiological Service of Russia in accordance with the planned procedure and sanitary-epidemiological indications.

4.9. To conduct laboratory tests (measurements) of drinking water quality, metrologically certified methods approved by the State Standard of Russia or the Ministry of Health of Russia are allowed. Sampling water for analysis is carried out in accordance with the requirements of state standards.  
     

Annex 1. Rules for the establishment of controlled indicators of drinking-water quality and the development of a working program for the industrial control of drinking-water quality

Annex 1   
(compulsory)

I. The order of organization of work on the selection of indicators of the chemical composition of drinking water

1. In accordance with paragraph 3.3 of these Sanitary Rules, the selection of indicators for the chemical composition of drinking water subject to ongoing production control shall be carried out for each water supply system on the basis of the results of the assessment of the water's chemical composition of water supply sources and the technology of drinking water production in the water supply system.

2. The choice of indicators characterizing the chemical composition of drinking water for extended studies is carried out by the organization that operates the water supply system, in conjunction with the center of state sanitary epidemiological surveillance in the city, the district in two stages.

2.1. At the first stage, the organization conducting the operation of the water supply system, in conjunction with the   
       
     state sanitary epidemiological supervision center, analyzes the following materials for at least the last 3 years: - state statistical reporting of enterprises and organizations, as well as other official data on the composition and volumes of sewage entering water sources higher water intake sites within their catchment area;   
       
     - environmental protection bodies, hydrometeorological services, water resources management, geology and subsoil use, enterprises and organizations on the quality of surface, groundwater and drinking water in the water supply system as a result of their monitoring of water quality and production control;  
       
     - the center of state sanitary epidemiological surveillance based on the results of sanitary inspections of enterprises and organizations that carry out economic activities and are sources of pollution of surface and groundwater, as well as on the results of water quality studies in places of water use of the population and in the water supply system;   
       
     - management bodies and agricultural organizations on the assortment and gross volume of pesticides and agrochemicals used in the catchment area (for a surface source) and within the sanitary protection zone (for an underground source). On the basis of the analysis, a list of substances characterizing the chemical composition of the water of a particular source of water supply and having hygienic standards is compiled in accordance with [Annex 2 of](http://docs.cntd.ru/document/901798042) these Sanitary Rules.

2.2. At the second stage, individual entrepreneurs and legal entities that operate the water supply system conduct extended laboratory water tests on a compiled list of chemicals, as well as on the indicators listed in Table 2 of these Sanitary Rules.

2.2.1. For a water supply system using reagent water treatment methods, in addition to incorporating expanded studies before the water is supplied to the distribution network, the indicators specified in Table 3 of these Sanitary Rules are included.

2.2.2. Extended laboratory water tests are carried out for one year at water intake points of the water supply system, and in the presence of water treatment or water mixing of various water intakes - also before drinking water is supplied to the distribution network.

2.2.3. The minimum number of water samples to be examined, depending on the type of water supply, which ensures the uniformity of obtaining information about water quality during the year, is adopted:   
       
     - for underground sources - 4 samples per year, selected in each season;   
       
     - for surface sources - 12 samples per year, selected monthly.

2.2.4. If it is necessary to obtain more representative and reliable information on the chemical composition of water and the dynamics of the concentrations of the substances present in it, the number of water samples to be examined and their frequency should be increased in accordance with the tasks set for assessing the water quality of the water supply source.

2.2.5. When carrying out advanced studies, the use of modern universal physicochemical methods for studying aqueous media (chromatography-mass spectrometric and others) is recommended, which allows obtaining the fullest information about the chemical composition of water.

2.3. The Center of State Sanitary and Epidemiological Supervision analyzes the results of extended studies of the chemical composition of water for each water supply system and, taking into account the assessment of the sanitary and hygienic conditions of drinking water use of the population and the sanitary and epidemiological situation in the city, settlement and district, the potential danger of the presence of chemicals in the health of the population is determined.

2.4. Based on the assessment, the Center for Sanitary and Epidemiological Supervision develops proposals for a list of controlled indicators, the number and frequency of sampling of drinking water for permanent production control.

II. The order of drawing up of the working program of industrial control of quality of potable water

1. Individual entrepreneurs and legal entities that operate the water supply system, on the basis of these Sanitary Rules, develop a work program.

2. For a water supply system that has several water intakes, a work program is prepared for each water intake taking into account its features. For underground water intakes, united by a common zone of sanitary protection and operating one aquifer, one work program can be prepared with a hydrogeological justification.

3. The work program should contain:

3.1. The list of controlled water quality indicators and their hygienic standards established by these Sanitary Rules:   
       
     - microbiological and parasitological (p.3.3, table 1);   
       
     - organoleptic (item 3.5, table 4);   
       
     - radiological (p.3.6, table 5);   
       
     - generalized (p.3.4.1, table 2);   
       
     - Residual quantities of reagents (Section 3.4.2, Table 3);   
       
     - chemicals selected for continuous monitoring in accordance with the rules specified in section 1 of this annex (3.4.1, table 2, and 3.4.3, [annex 2 of the](http://docs.cntd.ru/document/901798042) Sanitary Regulations).

3.2. Methods for determining controlled indicators.

3.3. The plan for water sampling points in water intake points, before water is supplied to the water distribution network (in the clean water tank) and at the points of water extraction of the external and internal water supply network;

3.4. The number of controlled water samples and the frequency of their selection for laboratory tests (tests), a list of indicators determined in the water samples under study.

3.5. Calendar schedules of water sampling and conducting their research (tests).

3.6. The number of water samples to be examined and the frequency of their selection are determined for each water supply system individually, taking into account the proposals of the State Sanitary Epidemiological Supervision Center, but should not be lower than those specified in 4.3, Table 6, 4.4, Table 7, and 4.5, Table 8, rules.

4. The work program should provide for a monthly analysis of the results of water quality control and determine the procedure for transmitting information based on the results of control by the administration of the water supply system, the state sanitary epidemiological supervision center and the local government body.

5. The work program is submitted for approval to the Center for State Sanitary and Epidemiological Supervision in the city, district and subsequent approval in accordance with the established procedure.

6. The work program is approved for a period of not more than 5 years. During this period, the work program may be amended and supplemented upon agreement with the center of state sanitary epidemiological supervision.

Appendix 2. Hygienic standards for the content of harmful substances in drinking water

Annex 2   
(compulsory)

1. This list includes hygienic standards for harmful substances in drinking water. It includes individual chemicals that can be present in drinking water in this form and can be identified by modern analytical methods.

2. Chemical substances are listed in accordance with the structure of organic and inorganic compounds. Each subsection is an extension of the corresponding section. Within subsections, substances are arranged in order of increasing numerical values ​​of their standards.   
       
     If the structure of a molecule of organic matter allows it to be attributed simultaneously to several chemical classes, then in the list it is placed according to the functional group, with the largest index of expansion (in horizontal classification).   
       
     Organic acids, including pesticides, are normalized by the anion, regardless of the form in which the acid is listed (in the form of an acid, its anion or its salt).  
       
     Elements and cations (item 1 of the section "inorganic substances") are normalized in total for all degrees of oxidation, unless otherwise indicated.

3. The list has the following vertical headings:

3.1. The first column of the list lists the most commonly used names of chemicals.

3.2. The second column contains synonyms for the names of chemicals and some trivial and common names.

3.3. The third column lists the values ​​of MPC or TAC in mg / l, where:   
       
     MPC is the maximum concentration at which substances do not have a direct or indirect effect on human health (when exposed to the body for life) and do not degrade the hygienic conditions of water consumption;   
       
     TACs (marked with an asterisk) are indicative permissible levels of substances in tap water, developed on the basis of calculated and rapid experimental methods for predicting toxicity.   
       
     If the column indicates "no", this means that the concentration of this compound in drinking water must be below the detection limit of the test method used.

3.4. The fourth column indicates the limiting sign of the harmfulness of substances, according to which the following standard is established:

- S.-. - Sanitary-toxicological;   
       
     - org. - organoleptic with the interpretation of the nature of the change in the organoleptic properties of water (water changes the smell of water, surrounds it - gives the water color, foam - causes the formation of foam, plaque - forms a film on the surface of the water, the additive - gives the water an aftertaste, causes opalescence).

3.5. The fifth column indicates the hazard class of the substance:

1 class - extremely dangerous;

2nd class - highly dangerous;

3 class - dangerous;

4 class - moderately dangerous.   
       
     The classification is based on indicators characterizing the different degree of danger to human chemical compounds polluting drinking water, depending on the toxicity, cumulative, the ability to cause long-term effects, limiting the indicator of harmfulness.   
       
     The hazard classes of substances take into account:   
       
     - when selecting the compounds that are subject to priority control in drinking water,   
       
     - when establishing a sequence of water protection measures that require additional investment;   
       
     - when justifying recommendations on the replacement of highly hazardous substances in processes with less dangerous ones;   
       
     - when determining the priority of the development of selective methods for analytical control of substances in water.  
     

HYGIENIC NORMATIVES for the   
content of harmful substances in drinking water

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Name of substance | Synonyms | The value of the standard in mg / l | Harmfulness index | Hazard Class |
| 1 | 2 | 3 | 4 | 5 |

Inorganic substances

|  |
| --- |
|  |
| **Inorganic substances** |

1. Elements, cations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **1. Elements, cations** | | | | |
| Thallium |  | 0.0001 | s.-t. | 2 |
| Phosphorus elemental |  | 0.0001 | s.-t. | 1 |
| Niobium |  | 0.01 | s.-t. | 2 |
| Tellurium |  | 0.01 | s.-t. | 2 |
| Samarium |  | 0.024 \* | s.-t. | 2 |
| Lithium |  | 0.03 | s.-t. | 2 |
| Antimony |  | 0.05 | s.-t. | 2 |
| Tungsten |  | 0.05 | s.-t. | 2 |
| Silver |  | 0.05 | s.-t. | 2 |
| Vanadium |  | 0.1 | s.-t. | 3 |
| Bismuth |  | 0.1 | s.-t. | 2 |
| Cobalt |  | 0.1 | s.-t. | 2 |
| Rubidium |  | 0.1 | s.-t. | 2 |
| Europium |  | 0.3 \* | org.privk. | 4 |
| Ammonia (by nitrogen) |  | 2.0 | s.-t. | 3 |
| Chrome ( ) |  | 0.5 | s.-t. | 3 |
| Silicon |  | 10.0 | s.-t. | 2 |
| Sodium |  | 200.0 | s.-t. | 2 |

2. Anions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **2. Anions** | | | | |
| Rodanide-ion |  | 0.1 | s.-t. | 2 |
| Chlorite ion |  | 0.2 | s.-t. | 3 |
| Bromide ion |  | 0.2 | s.-t. | 2 |
| Persulfate ion |  | 0.5 | s.-t. | 2 |
| Hexanitrocobaltiate ion |  | 1.0 | s.-t. | 2 |
| Ferrocyanide ion |  | 1.25 | s.-t. | 2 |
| Hydrosulfide ion |  | 3.0 | s.-t. | 2 |
| Nitrite ion |  | 3.0 | org. | 2 |
| Therchlorate ion |  | 5.0 | s.-t. | 2 |
| Chlorate ion |  | 20.0 | org.privk. | 3 |
| Hydrogen sulfide | Hydrogen sulfide | 0.003 | org. | 4 |
| Hydrogen peroxide | Hydrogen Peroxide | 0.1 | s.-t. | 2 |

Organic substances

|  |
| --- |
|  |
| **Organic substances** |

1. Hydrocarbons

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| **1. Hydrocarbons** | | | | | |
| 1.1. *aliphatic* | | | | | |
| Isoprene | 2-Methylbuta-1,3-diene | 0.005 | org. | | 4 |
| Butadiene-1,3 | Divinyl | 0.05 | org. | | 4 |
| Butylene | But-1-ene | 0.2 | org. | | 3 |
| Ethylene | Etienne | 0.5 | org. | | 3 |
| Propylene | Propene | 0.5 | org. | | 3 |
| Isobutylene | 2-Methylprop-1-ene | 0.5 | org. | | 3 |
| 1.2. *cyclic* | | | | | |
| 1.2.1. *alicyclic* | | | | | |
| 1.2.1.1. *single-core* | | | | | |
| Cyclohexene | Tetrahydrobenzene | 0.02 | s.-t. | 2 | |
| Cyclohexane | Hexahydrobenzene, hexamethylene | 0.1 | s.-t. | 2 | |
| 1.2.1.2. *multi-core* | | | | | |
| Norbornen | 2,3-Dicyclo (2.2.1) heptene | 0.004 | org. | 4 | |
| Dicycloheptadiene | Bicyclo [2.2.1] hepta-2,5-diene, norbornadiene | 0.004 | org. | 4 | |
| Dicyclopentadiene | Tricyclodeca-3,8-diene, 3a, 4,7,7a-tetrahydro-4,7-methano-1 H-indene | 0,015 | org. | 3 | |
| 1.2.2. *aromatic* | | | | | |
| 1.2.2.1. *single-core* | | | | | |
| Benzene |  | 0.01 | s.-t. | 2 | |
| Ethylbenzene |  | 0.01 | org.privk. | 4 | |
| *m-* Diethylbenzene | 1,3-Diethylbenzene | 0.04 | org. | 4 | |
| Xylene | Dimethylbenzene | 0.05 | org. | 3 | |
| Diisopropylbenzene | Di-1-methylethylbenzene | 0.05 | s.-t. | 2 | |
| Monobenzyltoluene | 3-Benzyltoluene | 0.08 | org. | 2 | |
| Butylbenzene | 1-Phenylbutane | 0.1 | org. | 3 | |
| Isopropylbenzene | Cumene, 1-methylethylbenzene | 0.1 | org. | 3 | |
| Styrene | Vinylbenzene | 0.1 | org. | 3 | |
| -Methylstyrene | (1-Methylvinyl) benzene | 0.1 | org.privk. | 3 | |
| Propylbenzene | 1-Phenylpropane | 0.2 | org. | 3 | |
| *n-tert-* Butyltoluene | 1- (1,1-Dimethylethyl) -4-methylbenzene, 1-methyl-4-t-butylbenzene | 0.5 | org. | 3 | |
| Toluene | Methylbenzene | 0.5 | org. | 4 | |
| Dibenzyltoluene | [(3-Methyl-4-benzyl) phenyl] phenylmethane | 0.6 | org. | 3 | |
| 1.2.2.2. *multi-core* | | | | | |
| Benz ( *a* ) pyrene |  | 0.000-005 | s.-t. | 1 | |
| 1.2.2.2.1. *biphenyls* | | | | | |
| Diphenyl | Biphenyl, phenylbenzene | 0,001 | s.-t. | 2 | |
| Alkyldiphenyl |  | 0.4 | org.plenka | 2 | |
| 1.2.2.2.2. *condensed* | | | | | |
| Naphthalene |  | 0.01 | org. | 4 | |

2. Halogen-containing compounds

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **2. Halogen-containing compounds** | | | | | | | |
| 2.1. *aliphatic* | | | | | | | |
| 2.1.1. *containing only limiting relations* | | | | | | | |
| Iodoform | Triiodomethane | | | 0.0002 | org. | | 4 |
| Tetrachlorheptane |  | | | 0,0025 | org. | | 4 |
| 1,1,1,9-tetrachloronane |  | | | 0.003 | org. | | 4 |
| Butyl chloride | 1-Chlorobutane | | | 0.004 | s.-t. | | 2 |
| 1,1,1,5-Tetrachloropentane |  | | | 0.005 | org. | | 4 |
| Carbon tetrachloride | Carbon tetrachloride | | | 0.006 | s.-t. | | 2 |
| 1,1,1,11-tetrachloro-undecane |  | | | 0.007 | org. | | 4 |
| Hexachlorobutane |  | | | 0.01 | org. | | 3 |
| Hexachloroethane |  | | | 0.01 | org. | | 4 |
| 1,1,1,3-Tetachloropropane |  | | | 0.01 | org. | | 4 |
| 1-Chloro-2,3-dibromopropane | 1,2-Dibromo-3-chloropropane, NEGAGON | | | 0.01 | org. | | 3 |
| 1,2,3,4-Tetrachlorobutane |  | | | 0.02 | s.-t. | | 2 |
| Pentachlorobutane |  | | | 0.02 | org. | | 3 |
| Perchlorobutane |  | | | 0.02 | org. | | 3 |
| Pentachloropropane |  | | | 0.03 | org. | | 3 |
| Dichlorobromomethane |  | | | 0.03 | s.-t. | | 2 |
| Chlorodibromomethane |  | | | 0.03 | s.-t. | | 2 |
| 1,2-Dibromo-1,1,5-trichloropentane | Bromtan | | | 0.04 | org. | | 3 |
| 1,2,3-Trichloropropane |  | | | 0.07 | org. | | 3 |
| Trifluorochloropropane | Freon 253 | | | 0.1 | s.-t. | | 2 |
| 1,2-Dibromopropane |  | | | 0.1 | s.-t. | | 3 |
| Bromoform | Tribromomethane | | | 0.1 | s.-t. | | 2 |
| Tetrachorethane |  | | | 0.2 | org. | | 4 |
| Chloretil | Chloroethane, ethyl chloride, ethyl chloride | | | 0.2 | s.-t. | | 4 |
| 1,2-Dichloropropane |  | | | 0.4 | s.-t. | | 2 |
| 1,2-Dichloroisobutane | 2-Methyl-1,2-dichloropropane | | | 0.4 | s.-t. | | 2 |
| Dichloromethane | Methylene chloride | | | 7.5 | org. | | 3 |
| Difluorochloromethane | Freon-22 | | | 10.0 | s.-t. | | 2 |
| Difluorodichloromethane | Freon-12 | | | 10.0 | s.-t. | | 2 |
| Methyl chloroform | 1,1,1-Trichloroethane | | | 10.0 \* | s.-t. | | 2 |
| 2.1.2. *containing double bonds* | | | | | | | |
| Tetrachloropropene |  | | 0.002 | | s.-t. | 2 | |
| 2-Methyl-3-chloroprop-1-ene | Metallyl chloride | | 0.01 | | s.-t. | 2 | |
| p-Chloroprene | 2-Chlorobuta-1,3-diene | | 0.01 | | s.-t. | 2 | |
| Hexachlorobutadiene | Perchlorbuta-1,3-diene | | 0.01 | | org. | 3 | |
| 2,3,4-Trichlorobutene-1 | 2,3,4-Trichlorobut-1-ene | | 0.02 | | s.-t. | 2 | |
| 2,3-Dichlorobutadiene-1,3 | 2,3-Dichlorobuta-1,3-diene | | 0.03 | | s.-t. | 2 | |
| 1,1,5-Trichloropentene |  | | 0.04 | | org. | 3 | |
| Vinyl chloride | Chloroethane, chloroethylene | | 0.05 | | s.-t. | 2 | |
| 1,3-Dichlorobugene-2 | 1,3-Dichlorobut-2-ene | | 0.05 | | org. | 4 | |
| 3,4-Dichlorobutene-1 |  | | 0.2 | | s.-t. | 2 | |
| Allyl chloride | 3-Chloroprop-1-ene | | 0.3 | | s.-t. | 3 | |
| 1,1-Dichloro-4-methylpentadiene-1,4 | Diene-1,4 | | 0.37 | | org.privk. | 3 | |
| Dichloropropene |  | | 0.4 | | s.-t. | 2 | |
| 3,3-Dichloroisobutylene | 3,3-Dichloro-2-methyl-1-propene | | 0.4 | | s.-t. | 2 | |
| 1,3-Dichloroisobutylene | 2-Methyl-1,3-dichloro-prop-1-ene | | 0.4 | | s.-t. | 2 | |
| 1,1-Dichloro-4-methylpentadiene-1,3 | Diene-1,3 | | 0.41 | | org. | 3 | |
| 2.2. *cyclic* | | | | | | | |
| 2.2.1. *alicyclic* | | | | | | | |
| 2.2.1.1. *single-core* | | | | | | | |
| Hexachlorocyclopentadiene | 1,2,3,4,5,5-Hexachloro-1,3-    cyclopentadiene | | 0,001 | | org. | 3 | |
| 1,1-Dichlorocyclohexane |  | | 0.02 | | org. | 3 | |
| 1,2,3,4,5,6-Hexachlorocyclohexane | Hexachloran | | 0.02 | | org. | 4 | |
| Perchloromethylene-cyclopentene | 4- (Dichloromethylene) -1,2,3,3,5,5-    Hexachlorocyclopentene | | 0.05 | | org. | 4 | |
| Chlorocyclohexane |  | | 0.05 | | org. | 3 | |
| 2.2.1.2. *multi-core* | | | | | | | |
| 1,2,3,4,10,10-Hexachlor-1,4,4a, 5,8,8a-   hexahydro-1,4-endoexo-5,8-  dimethanonaphthalene | 1,4,4a, 5,8,8a-Hexahydro-1,2,3,4,10,10- hexachloro-1,4,5,8-dimethanonaphthalene, aldrin | | 0.002 | | org. acc. | 3 | |
| 1,4,5,6,7,8,8-Heptachlor-4,7-en-doomethylene-  3a, 4,7,7a-tetrahydroin-tetrahydroindene | 3a, 4,7,7a-Tetrahydro-1,4,5,6,7,8,8-  heptachloro-4,7-methano-1H-indene, heptachlor | | 0.05 | | s.-t. | 2 | |
| -Dihydroheptachlor | 2,3,3a, 4,7,7a-Hexa-hydro-2,4,5,6,7,8,8-       heptachlor-4,7-methano-indene, dilor | | 0.1 | | org. | 4 | |
| Polychloropinene |  | | 0.2 | | s.-t. | 3 | |
| 2.2.2. *aromatic* | | | | | | | |
| 2.2.2.1. *single-core* | | | | | | | |
| 2.2.2.1.1. *with a halogen atom in the core* | | | | | | | |
| 2,5-Dichloro- *p-t-* butyltoluene | 1,4-Dichloro-2- (1,1-dimethyl) -5-    methylbenzene | | 0.003 | | org. | 3 | |
| *o-* Dichlorobenzene | 1,2-Dichlorobenzene | | 0.002 | | org. | 3 | |
| Chloro- *n-tert* -butiltoluol | 1-Methyl-4- (1,1-dimethylethyl) -2-   chlorobenzene | | 0.002 | | org. | 4 | |
| 1,2,3,4-Tetrachlorobenzene |  | | 0.01 | | s.-t. | 2 | |
| Chlorobenzene |  | | 0.02 | | s.-t. | 3 | |
| 2,4-Dichlorotoluene | 2,4-Dichloro-1-methylbenzene | | 0.03 | | org. | 3 | |
| 1,3,5-Trichlorobenzene |  | | 0.03 | | org. | 3 | |
| 2,3,6-Trichlorotoluene |  | | 0.03 | | org. | 3 | |
| *o-* and *n-* Chlorotoluene | *o-* and *n-* Chloromethylbenzene | | 0.2 | | s.-t. | 3 | |
| 2,3,6-Trichloro- *p-t-* butyltoluene |  | | 0.1 | | org. | 4 | |
| 2.2.2.1.2. *with a halogen atom in the side chain* | | | | | | | |
| Benzyl chloride | Chloromethylbenzene | | 0,001 | | s.-t. | 2 | |
| Hexachloromethacrolol | 1,3-Bis (trichloromethyl) benzene | | 0.008 | | org. | 4 | |
| Hexachloroparaxylene | 1,4-Bis (trichloromethyl) benzene | | 0.03 | | org. | 4 | |
| Benzotrifluoride | Trifluoromethylbenzene | | 0.1 | | s.-t. | 2 | |
| 2.2.2.2. *multi-core* | | | | | | | |
| 2.2.2.2.1. *biphenyls* | | | | | | | |
| Monochlorodiphenyl | | Monochlorobiphenyl | 0,001 | | s.-t. | 2 | |
| Dichlorodiphenyl | | Dichlorobiphenyl | 0,001 | | s.-t. | 2 | |
| Trichlorodiphenyl | | Trichlorobiphenyl | 0,001 | | s.-t. | 1 | |
| Pentachlorodiphenyl | | Pentachlorobiphenyl | 0,001 | | s.-t. | 1 | |
| 2.2.2.2.2. *condensed* | | | | | | | |
| 2-Chloronaphthalene | |  | 0.01 | | org. | 4 | |

3. Oxygen-containing compounds

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **3. Oxygen-containing compounds** | | | | | | | |
| 3.1. *alcohols and ethers* | | | | | | | |
| 3.1.1. *monohydric alcohols* | | | | | | | |
| 3.1.1.1. *aliphatic alcohols* | | | | | | | |
| 3-Methyl-3-buten-1-ol | Isobutenyl carbinol | | | 0.004 | s.-t. | 2 | |
| Heptyl alcohol normal | Heptan-1-ol, hexylcarbinol | | | 0.005 | s.-t. | 2 | |
| 3-Metal-1-buten-3-ol | 2-Methylprop-2-en-1-ol, dimethyl vinyl carbinol, isoprene alcohol | | | 0.005 | s.-t. | 2 | |
| Hexyl alcohol normal | Hexane-1-ol, amylcarbinol, pentylcarbinol | | | 0.01 | s.-t. | 2 | |
| Hexyl alcohol secondary | 1-Methylpentan-1-ol, hexane-2-ol, methylbutylcarbinol | | | 0.01 | s.-t. | 2 | |
| Hexyl tertiary alcohol | 2-Methylpentan-2-ol, diethylmethylcarbinol, TTS flotation reagent | | | 0.01 | s.-t. | 2 | |
| Non-alcohol normal alcohol | Nonan-1-ol, octylcarbinol | | | 0.01 | s.-t. | 2 | |
| Normal octyl alcohol | Octane-1-ol, heptylcarbinol | | | 0.05 | org.privk. | 3 | |
| Normal butyl alcohol | Butan-1-ol, propylcarbinol | | | 0.1 | s.-t. | 2 | |
| Alcoholic Alcohol | Prop-2-en-1-ol, vinylcarbinol | | | 0.1 | org. acc. | 3 | |
| Isobutyl alcohol | 2-Methylpropane-1-ol, isopropylcarbinol | | | 0,15 | s.-t. | 2 | |
| Secondary alcohol butyl | Butan-2-ol, methyl isobutylcarbinol | | | 0.2 | s.-t. | 2 | |
| Propyl alcohol | Propan-1-ol, ethyl carbinol | | | 0.25 | org. | 4 | |
| Isopropyl alcohol | Propan-2-ol, dimethylcarbinol | | | 0.25 | org. | 4 | |
| Butyl tertiary alcohol | *mpem-* Butyl alcohol, 1,1-dimethylethanol, trimethylcarbinol, 2-methyl-propan-2-ol | | | 1.0 | s.-t. | 2 | |
| Amyl alcohol | Pentan-1-ol, butyl carbinol | | | 1.5 | org. | 3 | |
| Alcohol methyl | Methanol, carbinol | | | 3.0 | s.-t. | 2 | |
| 3.1.1.1.1. *halogenated monohydric alcohols* | | | | | | | |
| Ethylene Chlorohydrin | | 1-Chloro-2-hydroxyethane, 2-chloroethanol, 2-chloroethyl alcohol,   chloromethyl carbinol, 1-chloroethane-2-ol | | 0.1 | s.-t. | 2 | |
| Alcohol 1,1,7-trihydrododecafluoroheptyl | | P-3 | | 0.1 | org. | 4 | |
| Alcohol 1,1,3-trihydrotetrafluoropropyl | | P-1 | | 0.25 | org. | 3 | |
| Alcohol 1,1,5-trihydrooctafluoropentyl | | P-2 | | 0.25 | org. | 4 | |
| Alcohol 1,1,9-trihydrohexadecafluorononyl | | P-4 | | 0.25 | org. | 4 | |
| Alcohol 1,1,1-trihydrotetraicosafluorotridecyl | | P-6 | | 0.25 | org. | 3 | |
| Alcohol 1,1,11-trihydro-eicosafluorundecyl | | P-5 | | 0.5 | org. | 3 | |
| Alcohol , -dichloro-isopropyl alcohol | | 1,3-Dichloropropan-2-ol, dichlorohydrin, dichloromethylcarbinol | | 1.0 | org. | 3 | |
| Alcohol 1,1-dihydroperfluoroheptyl | | 2,2,3,3,4,4,5,5,6,6,7,7,7-   Tridecafluoroheptan-1-ol | | 4.0 | s.-t. | 2 | |
| 3.1.1.2. *cyclic* | | | | | | | |
| 3.1.1.2.1. *alicyclic* | | | | | | | |
| Cyclohexanol | | Hexahydrophenol | | 0.5 | s.-t. | 2 | |
| 3.1.1.2.2. *aromatic* | | | | | | | |
| 3.1.1.2.2.1. *single-core* | | | | | | | |
| 3.1.1.2.2.1.1. *phenols* | | | | | | | |
| Phenol | |  | | 0,001 | org. | 4 | |
| *m* - and *n-* Cresol | | *m* - and *n-* Methylphenol, 1-hydroxy-2 (and 4) -methylphenol | | 0.004 | s.-t. | 2 | |
| *o* - and *n-* Propylphenol | | 1-Hydroxy-2 (and 4) -propylbenzene | | 0.01 | org. | 4 | |
| Alkylphenol | |  | | 0.1 | org. | 3 | |
| Dimethyl phenol | | Xylenol | | 0.25 | org. | 4 | |
| 3.1.1.2.2.1.1.1. *halogenated* | | | | | | | |
| Chlorophenol | |  | | 0,001 | org. | 4 | |
| Dichlorophenol | |  | | 0.002 | org.privk. | 4 | |
| Trichlorophenol | |  | | 0.004 | org. acc. | 4 | |
| 3.1.1.2.2.1.2. *containing a hydroxy group in the side chain* | | | | | | | |
| 3.1.1.2.2.1.2.1. *halogenated* | | | | | | | |
| 3.1.1.2.2.2. *condensed* | | | | | | | |
| -Naphthol | | Naphth-1-ol, 1-naphthol | | 0.1 | org. | 3 | |
| 3-Naphthol | | Naphth-2-ol, 2-naphthol | | 0.4 | s.-t. | 3 | |
| 3.1.2. *ethers* | | | | | | | |
| 3.1.2.1. *aliphatic* | | | | | | | |
| Ethynylvinyl butyl ether | | 1-Butoxybut-1-en-3-yne, butoxybutenin | | 0.002 | org. | 4 | |
| Diethylacetal | | 1,1-Diethoxyethane | | 0.1 | org. | 4 | |
| Ethoxylate of primary alcohols C12-C15 | |  | | 0.1 | org.pena | 4 | |
| Diethyl ether | | Ethoxyethane | | 0.3 | org.privk. | 4 | |
| Dimethyl ether | | Methoxymethane | | 5.0 | s.-t. | 4 | |
| 3.1.2.1.1. *halogenated* | | | | | | | |
| , -Dichlorodiethyl ether | | 1,1'-oxybis (2-chloroethane), chlororex | | 0.03 \* | s.-t. | 2 | |
| 3.1.2.2. *aromatic* | | | | | | | |
| Diphenylolpropane | | 4,4'-Isopropylidenediphenol | | 0.01 | org.privk. | 4 | |
| *m-* Phenoxytoluene | | 3-Phenoxytoluene | | 0.04 | org. | 4 | |
| Anisole | | Methoxybenzene | | 0.05 | s.-t. | 3 | |
| 3.1.3. *polyhydric alcohols and mixed compounds* | | | | | | | |
| 3.1.3.1. *aliphatic polyhydric alcohols* | | | | | | | |
| 2-Methyl-2,3-butanediol | | | Methylbutanediol | 0.04 | s.-t. | 2 | |
| Glycerol | | | Trioxypropane, propanetriol | 0.06 \* | org.pena | 4 | |
| Pentaerythritol | | | 2,2-Dimethylolpropanediol-1,3 | 0.1 | s.-t. | 2 | |
| Ethylene glycol | | | Ethane-1,2-diol | 1.0 | s.-t. | 3 | |
| 1,4-Butindiol | | | But-2-yn-1,4-diol | 1.0 | s.-t. | 2 | |
| 1,4-Butanediol | | | Butane-1,4-diol | 5.0 | s.-t. | 2 | |
| 3.1.3.1.1. *halogenated* | | | | | | | |
| Monochlorhydrine | | 3-Chloropropane-1,2-diol, -chlorohydrin | | 0.7 | org.privk. | 3 | |
| 3.1.3.2. *polyatomic phenols* | | | | | | | |
| Pyrocatechin | | | 1,2-benzenediol, 1,2-dihydroxybenzene | 0.1 | org.okr. | 4 | |
| Pyrogallol | | | 1,2,3-Trioxybenzene | 0.1 | org.okr. | 3 | |
| Hydroquinone | | | 1,4-Dihydroxybenzene | 0.2 | org.okr. | 4 | |
| 5-Methylresorcinol | | | 5-Methyl-1,3-benzenediol | 1.0 | org.okr. | 4 | |
| 3.1.3.2.1. *halogenated* | | | | | | | |
| 2,2-Bis (4-hydroxy-3,5-dichlorophenyl) propane | | | Tetrahlordian | 0.1 | org.privk. | 4 | |
| 3.1.3.3. *containing hydroxy- and hydroxy groups* | | | | | | | |
| 3.1.3.3.1. *aliphatic* | | | | | | | |
| Alcohol 2-allyloxyethyl | | |  | 0.4 | s.-t. | 3 | |
| Diethylene glycol | | | 2,2'-Oxidiethanol | 1.0 | s.-t. | 3 | |
| Tetraethylene glycol | | | 2,2'-Oxidiethylenedioxydiethanol | 1.0 | s.-t. | 3 | |
| Pentaethylene glycol | | | 3,6,9,12-Tetraoxatetradecane-  1,14-diol, ethylene glycoltetra-oxyethyl ether | 1.0 | s.-t. | 3 | |
| 3.1.3.3.2. *aromatic* | | | | | | | |
| 3-Phenoxybenzyl alcohol | | | 3-Phenoxyphenylmethanol 3-Phenoxyphenylcarbinol | 1.0 \* | s.-t. | 3 | |
| 3.2. *aldehydes and ketones* | | | | | | | |
| 3.2.1. *containing only one oxo group* | | | | | | | |
| 3.2.1.1. *aliphatic* | | | | | | | |
| 3.2.1.1.1. *aliphatic compounds containing only terminal bonds* | | | | | | | |
| Diethyl ketone | | | Pentan-3-one, 3-oxopentane | 0.1 | org. | 4 | |
| Methyl ethyl ketone | | | Butan-2-one, 2-oxobutane | 1.0 | org. | 3 | |
| 3.2.1.1.1.1. *halogenated* | | | | | | | |
| Chloral | | | Trichloroacetaldehyde | 0.2 | s.-t. | 2 | |
| Perfluoroheptanal hydrate | | |  | 0.5 | s.-t. | 2 | |
| 3.2.1.1.1.2. *containing hydroxy and oxo groups* | | | | | | | |
| Diacetone alcohol | | | 4-Hydroxy-4-methylpenten-2-one | 0.5 \* | s.-t. | 2 | |
| 3.2.1.1.2. *containing a double bond* | | | | | | | |
| Acrolein | | | Propenal, acrylic aldehyde | 0.02 | s.-t. | 1 | |
| Mezitil oxide | | | 2-Methylpent-2-en-4-one | 0.06 \* | s.-t. | 2 | |
| -Ethyl- acrolein | | | 2-Ethylhexenal | 0.2 | org. | 4 | |
| -Methylacrolein | | | But-2-enal, crotonaldehyde, 2-butenal | 0.3 | s.-t. | 3 | |
| 3.2.1.2. *cyclic* | | | | | | | |
| 3.2.1.2.1. *alicyclic* | | | | | | | |
| Cyclohexanone | | |  | 0.2 | s.-t. | 2 | |
| 3.2.1.2.1.1. *halogenated* | | | | | | | |
| Bromocampera | | |  | 0.5 \* | org. | 3 | |
| 3.2.1.2.2. *aromatic* | | | | | | | |
| 3.2.1.2.2.1. *containing mononuclear aromatic substituents* | | | | | | | |
| *m-* Phenoxybenzaldehyde | | | 3-Phenoxybenzaldehyde | 0.02 | s.-t. | 2 | |
| Acetophenone | | |  | 0.1 | s.-t. | 3 | |
| 2,2-Dimethoxy-1,2-diphenylethanone | | | 2,2-Dimethoxy-2-phenyl-acetophenone | 0.5 \* | org. | 3 | |
| 3.2.1.2.2.1.1. *halogenated* | | | | | | | |
| *m-* Bromobenzaldehyde | | | 3-Bromobenzaldehyde | 0.02 | s.-t. | 2 | |
| Pentachloroacetophenone | | | 1- (Pentachlorophenyl) ethanone | 0.02 | org.privk. | 3 | |
| 3,3-Dimethyl-1-chloro-1- (4-chlorophenoxy) butan-2-one | | |  | 0.04 | s.-t. | 4 | |
| 3.2.2. *containing more than one oxo group* | | | | | | | |
| Tetrahydroquinone | | | Cyclohexane-1,4-dione, 1,4-dioxocyclohexane | 0.05 | org. | 3 | |
| Glutaraldehyde | | | Glutaric dialdehyde | 0.07 | s.-t. | 2 | |
| Acetylacetonates | | |  | 2.0 \* | s.-t. | 2 | |
| Anthraquinone | | | 9,10-Dihydro-9,10-dioxoanthracene, 9,10-anthracenedione | 10.0 | s.-t. | 3 | |
| 3.2.2.1. *halogenated* | | | | | | | |
| 2,3,5,6-Tetrachloro- *n-* benzoquinone | | | Chlorinated, tetrachloroquinone | 0.01 | org.okr. | 3 | |
| 2,3-Dichloro-5-dichloromethylene-2-cyclopentene-   1,4-dione | | | 4,5-Dichloro-2- (dichloromethylene)  -4-cyclopentene-1,3-dione, diketone | 0.1 | org. | 3 | |
| 2,3-Dichloro-1,4-naphthoquinone | | |  | 0.25 | s.-t. | 2 | |
| 1-Chloroanthraquinone | | |  | 3.0 | s.-t. | 2 | |
| 2-Chloroanthraquinone | | | -Chloranthraquinone | 4.0 | s.-t. | 2 | |
| 3.2.2.2. *containing hydroxo group* | | | | | | | |
| 1,5-Dihydroxyanthraquinone | | | 1,5-Dihydroxy-9,10-anthracenedione | 0.1 | org.okr. | 3 | |
| 1,8-Dihydroxyanthraquinone | | | Dantron | 0.25 | org.okr. | 3 | |
| 1,2-Dihydroxyanthraquinone | | | 1,2-Dihydroxy-9,10-anthracenedione, alizarin | 3.0 | s.-t. | 2 | |
| 1,4,5,8-Tetrahydroxyanthraquinone | | | 1,4,5,8-Tetrahydroxy-9,10-   anthracenedione | 3.0 | s.-t. | 2 | |
| 1,4-Dihydroxyanthraquinone | | | Hinizarin | 4.0 | s.-t. | 2 | |
| 3.3. *carboxylic acids and their derivatives* | | | | | | | |
| 3.3.1. *carboxylic acids and their ions* | | | | | | | |
| 3.3.1.1. *containing one carboxy group* | | | | | | | |
| 3.3.1.1.1. *aliphatic* | | | | | | | |
| 3.3.1.1.1.1. *containing only limiting relations* | | | | | | | |
| Stearic acid, salt | | | Acid octadecane, salt | 0.25 \* | org. | 4 | |
| 3.3.1.1.1.1.1. *halogenated* | | | | | | | |
| Acid , , -trihlorpropionovaya | | | Acid 2,2,3-trichloropropionic | 0.01 | org.privk. | 4 | |
| Chloroanthic acid | | | 7-Chloroheptanoic acid | 0.05 | org. | 4 | |
| Monochloroacetic acid, salt | | | Chloroacetic acid, salt | 0.05 | s.-t. | 2 | |
| Chlorounecanoic acid | | | 11-Chloro-decane Acid | 0.1 | org. | 4 | |
| Chlorpellargonic acid | | | 9-chloronic anhydride | 0.3 | org. | 4 | |
| Perfluorovaleric acid | | | Nonafluoropentane acid, perfluoropentane acid | 0.7 | s.-t. | 2 | |
| The monochloropropionic acid | | | 2-Chloropropionic Acid | 0.8 | org.privk. | 3 | |
| Hydroperfluoroenergetic acid | | | Acid 2,2,3,3,4,4,5,5,6,6,7,7-  dodecafluoroheptane | 1.0 | s.-t. | 2 | |
| Perfluoroenic acid | | | Perfluoroptane acid | 1.0 | s.-t. | 2 | |
| Acid 2,2-dichloropropionic, sodium salt | | | Dalapon | 2.0 | org. | 3 | |
| Trichloroacetic acid, salt | | |  | 5.0 | org. | 4 | |
| 3.3.1.1.1.1.2. *containing aromatic substituents* | | | | | | | |
| 3.3.1.1.1.1.3. *containing hydroxy, hydroxy and oxo groups* | | |  | 2.0 |  |  | |
| Acid 5- (2,5-dimethylphenoxy) -2,2-dimethylpentanoic acid | | | Gemfibrozil | 0,001 | from. t. | 1 | |
| Phenoxyacetic acid | | | Acid, glycol, phenyl ether; hydroxyacetic acid, phenyl ether | 1.0 | s.-t. | 2 | |
| 2- ( -Naphthoxy) -propionic acid | | | 2- (1-Naphthalenyloxy) propionic acid | 2.0 | s.-t. | 2 | |
| 3.3.1.1.1.1.3.1. *halogenated* | | | | | | | |
| The 2,4-dichlorophenoxy- α - butyric acid | | | Acid 4- (2,4-dichlorophenoxy) oily, 2,4-DM | 0.01 | s.-t. | 2 | |
| Acid 2-methyl-4-chlorophenoxybutyric acid | | | Acid 4- (2-methylphenoxy) -4-chlorobutane tropotox | 0.03 | org. | 3 | |
| The 2,4-dichlorophenoxy-propionic acid | | | Acid 2- (2,4-dichlorophenoxy) propionic, 2,4-DP | 0.5 | org.privk. | 3 | |
| 3.3.1.1.1.2. *containing unsaturated bonds* | | | | | | | |
| Acrylic Acid | | | Propane-2-ene-carboxylic acid | 0.5 | s.-t. | 2 | |
| Acid methacrylic acid | | | Acid 2-methylpropane-2-ene-carboxylic acid | 1.0 | s.-t. | 3 | |
| 3.3.1.1.1.2.1. *oxo and halogen containing* | | | | | | | |
| Acid , -dichloro-3-formacrylic acid | | | Acid 4-oxo-2,3-dichloroisocrotonic acid, mucochloric acid | 1.0 | s.-t. | 2 | |
| 3.3.1.1.2. *cyclic* | | | | | | | |
| 3.3.1.1.2.1. *alicyclic* | | | | | | | |
| Chrysanthemum acid, salt | | | Acid 2,2-Dimethyl-3-propenyl-1-   cyclopropanecarboxylic acid , salt;   Acid  3-isobutenyl-2,2-dimethyl-1-   cyclopropanecarboxylic acid , the salt | 0.8 | s.-t. | | 3 |
| Naphthenic acids | | |  | 1.0 | org. | | 4 |
| 3.3.1.1.2.2. *aromatic* | | | | | | | |
| Benzoic acid, salt | | |  | 0.6 | org.privk. | | 4 |
| 3.3.1.1.2.2.1. *halogenated* | | | | | | | |
| Acid 2-chlorobenzoic | | | Acid *o-* chlorobenzoic | 0.1 | org.privk. | | 4 |
| Acid 4-chlorobenzoic | | | Acid *n-* chlorobenzoic | 0.2 | org.privk. | | 4 |
| Acid 2,3,6-trichlorobenzoic | | |  | 1.0 | s.-t. | | 2 |
| 3.3.1.1.2.2.2. *containing hydroxy, hydroxy, oxo groups* | | | | | | | |
| Acid 2-hydroxy-3,6-dichlorobenzoic | | |  | 0.5 | org.okr. | | 3 |
| Acid 2-methoxy-3,6-dichlorobenzoic | | | Acid 2-methoxy-3,6-dichlorobenzoic, dianate | 15.0 | s.-t. | | 2 |
| 3.3.1.2. *polybasic acids* | | | | | | | |
| 3.3.1.2.1. *aliphatic* | | | | | | | |
| Acid maleic acid | | | *Cis-* butenedione acid | 1.0 | org. | | 4 |
| Acid adipic acid, salt | | | Hexanedioic acid, salt; acid 1,4-butanedicarboxylic acid, salt | 1.0 | s.-t. | | 3 |
| Sebacic acid | | | Acid 1,8-octanedicarboxylic acid | 1.5 | s.-t. | | 3 |
| 3.3.1.2 2. *Aromatic* | | | | | | | |
| 3.3.1.2.2.1. *halogenated* | | | | | | | |
| 3.3.2. *esters* | | | | | | | |
| 3.3.2.1. *mono-acid esters* | | | | | | | |
| 3.3.2.1.1. *aliphatic* | | | | | | | |
| 3.3.2.1.1.1. *limiting* | | | | | | | |
| 3.3.2.1.1.1.1. *unsubstituted* | | | | | | | |
| 3.3.2.1 1.1. 1.1. *Alcohols containing only limiting bonds* | | | | | | | |
| Methyl acetate | | | Acetic acid, methyl ether; acetic acid methyl ester | 0.1 | s.-t. | | 3 |
| Ethyl acetate | | | Acetic acid, ethyl ether; ethyl acetate | 0.2 | s.-t. | | 2 |
| 3.3.2.1.1.1.1.2. *containing double bonds* | | | | | | | |
| *cis-* 8-Dodecyl-acetate | | | Acetic acid, Z-dodec-8-enyl ester; Z-dodec-8-enyl ester of acetic acid; denacil | 0,00001 | org. | | 4 |
| Vinyl Acetate | | | Acetic acid, vinyl ether; vinyl ester of acetic acid | 0.2 | s.-t. | | 2 |
| 3.3.2.1.1.1.1.3. *of polyhydric alcohols* | | | | | | | |
| 3.3.2.1.1.1.1.4 *Alcohols containing hydroxy, hydroxy, oxo groups* | | |  | 0.6 |  | |  |