

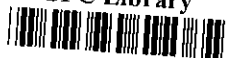


# INFORMATION CIRCULAR

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SEWAGE TREATMENT IN THE PACIFIC  
MINI GLOSSARY OF TERMS USED

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A certain number of terms commonly used are not always understood by the users. These definitions even lead, at times, to disputes among specialists. It was therefore felt that to state some of them in simple and readily comprehensible language would serve a useful purpose.

Activated carbon

Charcoal specially treated to improve its adsorbing power used to retain certain undesirable substances (fluid treatment).

Activated sludge

Flaked sludge, produced through the prolonged aeration of purification sludge. Owing to the multiplication of micro-organisms therein, it is used for the treatment of fresh sewage.

Aeration

Introduction of air into a medium, or bringing the same into contact with air, e.g. aeration of water: a natural or artificial process to improve the quality of the water or facilitate treatment thereof.

Biodegradable

Capable of being decomposed by living organisms.

Biodegradation

Decomposition of certain substances by living organisms. Biodegradation is one of the most important factors in the self-purification of a medium.

### Biome

A portion of the area in which all the physical and chemical factors of the environment remain practically constant, e.g. cave; pool (see "Biotum", "Ecosystem").

### Biotum

All the animals and plants living in the same environmental conditions within a given space, the dimensions of which may vary.

### B.O.D. (Biochemical Oxygen Demand)

Consumption of gaseous molecular oxygen through biological means, leading to the degradation of organic matter present in the water. This natural phenomenon is due to the activity of certain micro-organisms which contribute thereby to the self-purification of the water.

### B.O.D.X. (Biochemical Oxygen Demand in X days)

Quantity of oxygen consumed in X days through biochemical means by a sample of natural or residuary water, measured in the laboratory under specific conditions.

### Chlorination

Treatment of water by chlorine or chlorinated compounds, so as to disinfect it and oxidise any organic matter it may contain.

### Clarification

The flocculation and sedimentation processes that free a liquid of the greater part of suspended matter contained therein.

### C.O.D. (Chemical Oxygen Demand)

Quantity of oxygen given off through chemical means by potassium dichromate to reducing agents present in natural or residuary water, measured in the laboratory under specific conditions.

### Compost

A mixture made from organic waste in various stages of decomposition used as manure for certain crops. Household refuse may be converted into compost on an industrial scale.

### Ecology

A science concerned with the interrelationship of organisms and their environments.

### Ecosystem

An ecological community considered together with the non-living factors of its environment as a functional unit.

### Effluents

Liquid or gaseous residue of domestic, industrial or agricultural origin, rejected by a user.

### Environment

All of the physical, chemical and biological elements taken as a whole at a given time, and the social factors likely to have an immediate or long-term effect, direct or indirect, on living organisms and human activities.

### Eutrophication

Process whereby organic matter is accumulated in stagnant waters, through the proliferation and decomposition of unconsumed plants, which reduces the oxygen content of deeper pools.

This natural process is speeded up by the addition of nutrients resulting from human activity.

The process of evolution in lakes involves the following stages: oligotrophy, mesotrophy and eutrophy, characterized by an increase in productivity, a decrease in limpidity and a modification in the flora and fauna.

### Filter media

Filter made up of a layer of coarse-grained material, through which sewage percolates; and in which organic matter is stabilized through a biological process.

### Flocculation

A physical or chemical process, natural or induced for purposes of purification, in which microscopic or ultramicroscopic particles suspended in the colloidal state in a liquid become aggregated into clusters.

### Green belt

Surface covered by vegetation around population centres or units, established or maintained to eliminate or reduce certain nuisances, and improve the quality of the environment.

M.A.D. (Maximum Admissible Dose)

The maximum amount of a substance or energy that, as per the present state of our knowledge, seems to be incapable of causing disorders detectable even over a long period, in a person who has been exposed to the same or his progeny.

Micropollutant

A chemical pollutant found in low concentrations in a given medium. It is generally only slightly degradable, difficult to eliminate and capable of accumulating in food chains.

Noxology

The study of nuisance.

Nuisance

The activity of a deteriorative which involves considerable risk to the health or welfare of a human being, or which can indirectly affect him through repercussions on his natural, cultural, or economic heritage.

Nuisance critical level

Pollutant content level beyond which human health is endangered, or there exist harmful implications for animals and plants.

O.M. (Oxidisable matter)

Substances reacting in the presence of oxygen, essentially oxygen dissolved in water, representing a significant factor in water pollution.

Organic matter

A chemical term referring to compounds containing carbon atoms.

Oxidant

A chemical compound which can absorb electrons or make oxygen atoms available for reaction with another compound.

Ozonization

Treatment of water with ozone, to disinfect it or eliminate micropollutants through oxidation.

Park strip

An area covered with vegetation, established or maintained so as to separate two urban zones.

## pH

The pH of a solution is the decimal antilogarithm of its hydrogen ion concentration.

## Population equivalent

A concept used to express in approximate terms the pollution load of an industrial effluent, calculated on the basis of a conventional discharge per individual (in terms of suspended or oxidisable substances).

## Purification

Process making for the elimination from an effluent of harmful or undesirable substances before it is finally discharged into the natural environment.

## Purification plant

Installations intended to purify sullage before it is discharged into the natural environment.

## Pollutant

A physical, chemical or biological noxious substance which occasions an inconvenience or a nuisance. In common parlance, this term is also used to denote these same substances when they are present in the environment at levels inferior to the nuisance critical level.

## Pollution

- 1) The direct or indirect introduction of a pollutant into a given environment.
- 2) The result of such introduction.

## Examples:

- Biological pollution (Bacteria, Algae...)
- Chemical pollution (Sulphur dioxide...)
- Physical pollution (Acoustic, radioactive, thermal...)

These three types of pollution which affect air, water, food and soil, are mostly the result of human activity.

## Sanitation

Collection, disposal and discharge of sewage or solid waste with or without prior treatment, as per sanitary requirements.

### Sanitation system

All the installations for the collection and disposal of waste and rain water for channelling towards a purification plant or discharging into the natural environment.

### Sedimentation

Separation through gravity of solid particles from the liquid containing them, or of two liquid effluents of different densities.

### Self-purification

A natural process (biological, chemical or physical) enabling a medium to itself destroy the organic wastes it produces or that are introduced into it from without.

### Sludge

Solid residue of a paste-like consistency, with a varying water content, which is the end product of soil erosion, sewage treatment (purification sludge) or industrial treatment (industrial sludge).

### Sludge digestion

Anaerobic decomposition of purification sludge.

### Surface acting agent

An active compound of detergents which dissolves (or suspends) impurities adhering to surfaces.

There are several types of surface acting agents: ampholyte, anionic, cationic, non-ionic. Syn.: Tension-reducing agent ; Surfactant.

### S.S. (Suspended solids)

Very divided solids contained in a liquid, which are not dissolved in it and may largely be eliminated through sedimentation.

### Treatment plant

Installations intended to make the water suitable for domestic or industrial use.

### Turbidity

State of a liquid containing very fine suspended solids, which do not allow light to pass through.

In a separate information circular we shall provide a list of formulas for practical use in the usual S.I. units corresponding to the most commonly used basic definitions and calculations in sanitation systems and purification plants.

The South Pacific Commission makes available to users information and documentation on suppliers and builders where purification plants are concerned, with special reference to the techniques used by such builders, as well as lists of suppliers in Europe, classified according to specific sectors of activity.

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