

## Antiseptics, Germicides, Disinfectants and Deodorizers.

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(Concluded.)

### GERMICIDES.

The term Germicide includes substances which act upon infectious organisms and their spores, rendering them innocuous or inert. Such substances must be either of a corrosive, caustic or poisonous nature to themselves.

The classification of germicides in respect to their germ-destroying power, as determined by the Health Department of the City of New York, is given as follows: "(1) corrosive sublimate, 64 grains to the gallon; (2) carbolic acid, 5 per cent. solution; (3) bromine, 1 pound to 200 gallons; (4) potassium permanganate, 17½ ounces to 200 gallons; (5) chloride of lime, 4 ounces to the gallon; (6) sulphate of iron, 1½ pounds to the gallon; (7) sulphate of zinc, 4 ounces to the gallon; (8) common salt, 2 ounces to the gallon."

The list of germicidal drugs and chemicals includes the following, which may be used in various combinations or singly, as required: Calcium chloride, calx chlorinata, zinc chloride, zinc sulpho-carbulate, zinc sulphate, copper sulphate, iron sulphate, mercury bichloride, silver nitrate, etc., carbolic acid, sulphurous acid, chloroform, ether, alcohol, bisulphide of carbon, gasoline, benzine, rhigolene, turpentine, etc., iodine, sulphur, chlorine, etc.

### GERMICIDES (COMBINATIONS.)

#### Germicide solution (No. 1):

Carbolic acid ..... 2 ounces.  
Chloride of zinc ..... 60 grains.  
Turpentine, qs ..... 16 ounces.—M.

#### Germicide solution (No. 2):

Bichloride of mercury ..... 10 grains.  
Turpentine ..... 16 ounces.—M.

#### Germicide solution (No. 3):

Chloride of zinc ..... 10 grains.  
Sulpho carbolate of zinc ..... 15 grains.  
Chlorine water ..... 16 ounces.—M.

### DISINFECTANTS.

Among the last treated of under the title of antiseptics, may be found a number of disinfectants.

A few formulas representing true disinfectants are, however, in order here.

Mr. Keenan, who is authority on the merit of moist heat as ranking first, then dry heat, sulphur dioxide, chlorine and crude carbolic acid, in the order named.

Sulphaminol (or thio oxyphenyldiamin) is a new disinfectant, which is said to split up into carbolic acid and some compounds of sulphur.

There are 5 standard disinfectant solutions recommended by the Pennsylvania Board of Health, as follows:

Standard Solution No. 1.—Dissolve chloride of lime or bleaching powder of the best quality (containing at least twenty-five per cent. of available chlorine) in soft water in the proportion of four ounces to the gallon.

Standard Solution No. 2.—Dissolve corrosive sublimate and permanganate of potash in soft water in the proportion of two drachms of each salt to the gallon.

NOTE.—No. 1.—This solution is highly poisonous. No. 2.—It requires a contact of one hour to be efficient. No. 3.—It destroys lead pipes. No. 4.—It is without odor.

Standard Solution No. 3.—To one part of Labarraque's solution (liquor sodæ chlorate, U. S. Pharmacopeia or hypochlorite of soda,) add five parts of soft water.

NOTE.—Competent authority has pronounced this superior to all other disinfectants.

Standard Solution No. 4.—Dissolve corrosive sublimate in water in the proportion of four ounces to the gallon, and add one drachm of permanganate of potash to give color to the solution, as a precaution against poisoning. One fluid ounce of this solution to the gallon of water is sufficiently strong. Articles should be left in it for two hours.

NOTE.—Corrosive sublimate solutions should be kept in wooden or crockery vessels.

### FOR THE DISINFECTION OF ZINCS AND CESS-POOLS.

No. 5.—Carbolic Acid Solution.—Mix one pint of carbolic acid with two and a half gallons of water.

### LIPPINCOTT'S CHLORIDES.

Ammonium chloride } aa ..... 3 ounces.  
Sodium chloride }  
Hydrochloric acid ..... 3 fl. ozs.  
Aqua q. s. fiat ..... 64 ounces.—M.

### LIPPINCOTT'S PHENOL COMPOUNDS.

Carbolic acid ..... 2 ounces.  
Soda bicarb ..... 1 ounce.  
Borate of soda ..... ½ ounce.  
Glycerine ..... 2 ounces.  
Caramel ..... 2 ounces.  
Aqua q. s. ..... 16 ounces.  
M. et filter.

### DISINFECTANT SOLUTION NO. 1

Ferri chloride ..... 4 parts.  
Zinc chloride ..... 5 parts.  
Aluminum chloride ..... 5 parts.  
Calcium chloride ..... 4 parts.  
Magnesium chloride ..... 3 parts.  
Water q. s. fiat ..... 90 parts.

Dissolve and add to each gallon ten grains thymol and one fourth ounce oil of rosemary previously dissolved in about six parts of alcohol, and filter.

### DISINFECTANT SOLUTION NO. 2.

Potassium chloride }  
Sodium chloride } ..... of each 5 parts.  
Magnesium chloride }  
Zinc chloride }  
Aluminum chloride } ..... of each 3 parts.  
Calcium chloride ..... 6 parts.  
Water q. s. fiat ..... 100 parts.

Dissolve and saturate with methyl salicylate and oil of eucalyptus. The diluted solutions of these may be made by mixing one pint of the concentrated solution with one gallon of water.

### HOUSEHOLD DISINFECTANT (WINTER'S.)

Ferri sulphas conc ..... 8 ounces.  
Ammonia mur. pulv. .... 1 ounce.  
Hydrarg. bichlor. corr. pulv. .... 1 ounce.  
Spts. vini rect. .... 4 ounces.  
Aqua, ad ..... 32 ounces.

Put the iron sulphate with 24 ounces of water. Dissolve the corrosive sublimate in the alcohol. Mix both solutions, adding the muriate and enough water to make 32 ounces. Mix with equal parts of water and use as a disinfectant.

### GOODSELL'S FOUR CHLORIDES.

Hydrarg. chlorid. corr. .... 1 grain.  
Liq. arsen. chloridi ..... ½ fl. drachm.  
Tinct. ferri chloridi } aa ..... 4 fl. drachms  
Acid hydrochlor. dil. }  
Syrupi ..... 3 fl. ounces.  
Aqua q. s. .... 6 fl. ounces.

### TUSON'S DISINFECTANT POWDER.

Tuson's disinfectant powder is composed of a mixture of sulphite of lime, sulphate of alumina and sulphate of zinc—the last body being well known as an efficient disinfectant and antiseptic. The first two bodies when moistened decompose one another and evolve sulphur dioxide (SO<sub>2</sub>). Every pound of the powder gives off seven gallons of SO<sub>2</sub>.

The advantage of having a powder of this sort, which will at once evolve such a powerful disinfectant as SO<sub>2</sub>, is apparent to every one. This disinfectant is largely sold abroad, the ingredients being printed upon each package.

### TAYLOR'S SOLUTION OF FOUR CHLORIDES.

Alum ..... 10 ounces.  
Sal soda ..... 10 ounces.  
Sal ammoniac ..... 2 ounces.  
Common salt ..... 2 ounces.  
Chlor. zinc ..... 1 ounce.  
Muriatic acid, com'l. .... q. s.  
Water q. s. to ..... 1 gallon.

Dissolve the alum in half a gallon of boiling water, then add the sal soda, which gives a precipitate of aluminium hydrate. Muriatic acid is then added in sufficient quantity to dissolve this precipitate, thereby forming aluminum chloride. The other salts are then dissolved in the remainder of the water and added to the first solution.

### DEODORIZERS

Are substances which destroy foul or unpleasant odors. There are many suggestions and modifications of this class of substances, such as perfumes and medicated vinegars or solutions and powders and a few volatile oils and balsams.

I submit the following formulæ:

### DEODORANT VINEGAR (ORIGINAL).

Cologne or bay rum opt ..... ½ ounce.  
Dil. acetic acid ..... 15½ ounces.

### LIPPINCOTT'S DEODORANT.

Oil gaultheria ..... 20 drops.  
Thymol ..... 2 drachms.  
Chloroform ..... 1 drachm.  
Acetic ether ..... 1 drachm.  
Diluted alcohol q. s. .... 16 ounces.

Dissolve the oil in the chloroform, add the acetic ether and then the thymol and lastly add the dil. alcohol.

Styrol ..... 1 drachm.  
Alcohol ..... 16 ounces.

### FLUID DEODORANT.

(No 1):

Thymol ..... 5 parts.  
Phenol ..... 10 parts.  
Alcohol ..... 100 parts.  
Water ..... 885 parts.

This solution is used as a spray or is evaporated by gently heating.