

stand for 15 minutes. Add 7 mL of potassium iodide TS, stopper immediately, shake well, and titrate the liberated iodine with 0.1 mol/L sodium thiosulfate VS (indicator: 1 mL of starch TS). Perform a blank determination.

Each mL of 0.05 mol/L bromine VS  
= 1.5686 mg of C<sub>6</sub>H<sub>6</sub>O

**Containers and storage** Containers—Tight containers.  
Storage—Light-resistant.

## Liquefied Phenol

### Liquefied Carbolic Acid

液状フェノール

Liquefied Phenol is Phenol maintained in a liquid condition by the presence of 10% of Water or Purified Water.

It contains not less than 88.0% of phenol (C<sub>6</sub>H<sub>6</sub>O: 94.11)

**Description** Liquefied Phenol is a colorless or slightly reddish liquid. It has a characteristic odor.

It is miscible with ethanol (95), with diethyl ether and with glycerin. A mixture of equal volumes of Liquefied Phenol and glycerin is miscible with water.

The color changes gradually to dark red on exposure to light or air.

It cauterizes the skin, turning it white.

Specific gravity  $d_{20}^{20}$ : about 1.065

**Identification (1)** Add 1 drop of iron (III) chloride TS to 10 mL of a solution of Liquefied Phenol (1 in 100): a blue-purple color develops.

(2) Add bromine TS dropwise to 5 mL of a solution of Liquefied Phenol (1 in 10,000): a white precipitate is produced, which at first dissolves with shaking, but becomes permanent as excess of the reagent is added.

**Boiling point** Not more than 182°C.

**Purity (1)** Clarity and color of solution and acidity or alkalinity—Dissolve 1.0 g of Liquefied Phenol in 15 mL of water: the solution is clear, and neutral or only faintly acid. Add 2 drops of methyl orange TS: no red color develops.

(2) Residue on evaporation—Weigh accurately about 5 g of Liquefied Phenol, evaporate on a water bath, and dry the residue at 105°C for 1 hour: the mass is not more than 0.05% of the mass of the sample.

**Assay** Dissolve about 1.7 g of Liquefied Phenol, accurately weighed, in a water to make exactly 1000 mL. Transfer exactly 25 mL of this solution to an iodine flask, add exactly 30 mL of 0.05 mol/L bromine VS, then 5 mL of hydrochloric acid, and immediately stopper the flask. Shake the flask repeatedly for 30 minutes, allow to stand for 15 minutes, then add 7 mL of potassium iodide TS, at one stopper the flask tightly, and shake well. Add 1 mL of chloroform, stopper the flask, and shake thoroughly. Titrate the liberated iodine with 0.1 mol/L sodium thiosulfate VS (indicator: 1 mL of starch TS). Perform a blank determination.

Each mL of 0.05 mol/L bromine VS  
= 1.5686 mg of C<sub>6</sub>H<sub>6</sub>O

**Containers and storage** Containers—Tight containers.  
Storage—Light-resistant.

## Dental Phenol with Camphor

歯科用フェノール・カンフル

### Method of preparation

Phenol	35 g
<i>d</i> - or <i>dl</i> -Camphor	65 g

To make 100 g

Melt Phenol by warming, add *d*-Camphor or *dl*-Camphor, and mix.

**Description** Dental Phenol with Camphor is a colorless or light red liquid. It has a characteristic odor.

**Containers and storage** Containers—Tight containers.  
Storage—Light-resistant.

## Phenol and Zinc Oxide Liniment

フェノール・亜鉛華リニメント

### Method of preparation

Liquefied Phenol	22 mL
Powdered Tragacanth	20 g
Carmellose Sodium	30 g
Glycerin	30 mL
Zinc Oxide	100 g
Purified Water	a sufficient quantity

To make 1000 g

Mix Liquefied Phenol, Glycerin and Purified Water, add Powdered Tragacanth in small portions by stirring, and allow the mixture to stand overnight. To the mixture add Carmellose Sodium in small portions by stirring to make a pasty mass, add Zinc Oxide in small portions, and prepare the liniment as directed under Liniments. Less than 5 g of Powdered Tragacanth or Carmellose Sodium can be replaced by each other to make 50 g in total.

**Description** Phenol and Zinc Oxide Liniment is a white, pasty mass. It has a slight odor of phenol.

**Identification (1)** Shake well 1 g of Phenol and Zinc Oxide Liniment with 10 mL of diethyl ether, and filter. To the filtrate add 10 mL of dilute sodium hydroxide TS, shake well, and separate the water layer. To 1 mL of the water layer add 1 mL of sodium nitrite TS and 1 mL of dilute hydrochloric acid, shake, and add 3 mL of sodium hydroxide TS: a yellow color develops (phenol).

(2) Place 1 g of Phenol and Zinc Oxide Liniment in a porcelain crucible, heat gradually raising the temperature until the content is charred, and then ignite it strongly: a yellow color develops, and disappears on cooling. To the residue

add 10 mL of water and 5 mL of dilute hydrochloric acid, shake well, and filter. To the filtrate add 2 to 3 drops of potassium hexacyanoferrate (II) TS: a white precipitate is produced (zinc oxide).

(3) Shake 0.5 g of Phenol and Zinc Oxide Liniment with 1 mL of water and 5 mL of chloroform, separate the chloroform layer, and use this solution as the sample solution. Separately, dissolve 0.01 g of phenol in 5 mL of chloroform, and use this solution as the standard solution. Perform the test with these solutions as directed under the Thin-layer Chromatography. Spot 5  $\mu$ L each of the sample solution and the standard solution on a plate of silica gel for thin-layer chromatography. Develop the plate with a mixture of ethyl acetate, ethanol (99.5) and ammonia solution (28) (50:5:1) to a distance of about 10 cm, and air-dry the plate. Allow the plate to stand in iodine vapor: the spots obtained from the sample solution and the standard solution show the same *R<sub>f</sub>* value.

**Containers and storage** Containers—Tight containers.

## Phenolated Water

フェノール水

Phenolated Water contains not less than 1.8 w/v% and not more than 2.3 w/v% of phenol (C<sub>6</sub>H<sub>6</sub>O: 94.11).

### Method of preparation

Liquefied Phenol	22 mL
Water or Purified Water	a sufficient quantity
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To make 1000 mL	

Mix the above ingredients.

**Description** Phenolated Water is a colorless, clear liquid, having the odor of phenol.

**Identification** (1) Add 1 drop of iron (III) chloride TS to 10 mL of Phenolated Water: a blue-purple color develops.

(2) To 5 mL of a solution of Phenolated Water (1 in 200) add bromine TS dropwise: a white precipitate is formed, and it dissolves at first upon shaking but becomes permanent as excess of the reagent is added.

**Assay** Take exactly 2 mL of Phenolated Water into an iodine flask, add 25 mL of water, then add exactly 40 mL of 0.05 mol/L bromine VS and 5 mL of hydrochloric acid, stopper immediately, shake for 30 minutes, and allow to stand for 15 minutes. Add 7 mL of potassium iodide TS, stopper tightly at once, shake well, and titrate the liberated iodine with 0.1 mol/L sodium thiosulfate VS (indicator: 1 mL of starch TS). Perform a blank determination.

Each mL of 0.05 mol/L bromine VS  
= 1.5686 mg of C<sub>6</sub>H<sub>6</sub>O

**Containers and storage** Containers—Tight containers.

## Phenolated Water for Disinfection

消毒用フェノール水

Phenolated Water for Disinfection contains not less than 2.8 w/v% and not more than 3.3 w/v% of phenol (C<sub>6</sub>H<sub>6</sub>O: 94.11).

### Method of preparation

Phenol for Disinfection	31 g
Water or Purified Water	a sufficient quantity
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To make 1000 mL	

Mix the above ingredients.

**Description** Phenolated Water for Disinfection is a clear, colorless liquid, having the odor of phenol.

**Identification** (1) Add 1 drop of iron (III) chloride TS to 10 mL of Phenolated Water for Disinfection: a blue-purple color develops.

(2) Proceed with 5 mL of a solution of Phenolated Water for Disinfection (1 in 200) as directed in the Identification (2) under Phenol for Disinfection.

**Assay** Take exactly 5 mL of Phenolated Water for Disinfection, add water to make exactly 100 mL, then pipet 25 mL of the solution into an iodine flask, and proceed as directed in the Assay under Phenol for Disinfection.

Each mL of 0.05 mol/L bromine VS  
= 1.5686 mg of C<sub>6</sub>H<sub>6</sub>O

**Containers and storage** Containers—Tight containers.

## Phenovalin and Magnesium Oxide Powder

フェノバリン・マグネシア散

Phenovalin and Magnesium Oxide Powder contains not less than 45.0% and not more than 55.0% of magnesium oxide (MgO: 40.30).

### Method of preparation

Phenovalin	250 g
Magnesium Oxide	500 g
Starch, Lactose, or their mixture	a sufficient quantity
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To make 1000 g	

Prepare as directed under Powders, with the above ingredients.

**Description** Phenovalin and Magnesium Oxide Powder occurs as a white powder.

It acquires a slightly red color on standing.

**Identification** (1) Shake 2 g of Phenovalin and Magnesium Oxide Powder with 10 mL of chloroform, and filter. Evaporate the filtrate to dryness on a water bath.