

Table I  
COMPARISON OF GENERAL PURPOSE CLEANERS

Materials	Formulations (Parts by weight)			
	A	B	C	D
Yarmor <sup>(b)</sup> 302 pine oil <sup>(a)</sup>	7.5	7.5		
Pamak <sup>(c)</sup> 4 fatty acid <sup>(a)</sup>	4.7	4.7		
Caustic soda	0.65	0.65	Equivalent	
Ultrawet 35KX or equivalent <sup>(d)</sup>	24.0		Equivalent	
Ultrawet 60K or equivalent <sup>(d)</sup>		10.6	Equivalent	
Conco SXS or equivalent <sup>(d)</sup>		3.75	Equivalent	
Tetrapotassium pyrophosphate	5.0	5.0		
Isopropanol	8.75	8.75		
Water	49.4	59.05		
	100.00	100.00		
<b>Cleaning Efficiency</b>				
Performance rating using recognized tests for evaluating hard-surface cleaners	Superior to all tested	Superior to C and D	Inferior to A and B	Poorest

**Storage Stability**

Formulations A and B passed both freeze-thaw (3 cycles) and heat-stability (10 days at 120°F) tests.

- (a) Blend the pine oil and fatty acids at room temperature. Stir in the synthetic anionic compounds followed by addition of the isopropyl alcohol. Add the caustic soda as 20 percent NaOH (assay 97 percent) aqueous solution, and continue stirring for 10 to 15 minutes (minimum). Stir in the pyrophosphate as a 15 to 17 percent aqueous solution. Then add the remaining water, and continue stirring until the product is homogeneous and clear.
- (b) Hercules pine oils, Yarmor 302W and Herco grades, should prove equally satisfactory.
- (c) Hercules tall oil fatty acids; typical acid number 188.
- (d) These anionic surfactants were chosen for availability, performance, economics, etc.; similar products would be expected to be equally satisfactory.

**HANDLING OF PINE OIL**

**WARNING:**

**KEEP OUT OF REACH OF CHILDREN. HARMFUL IF SWALLOWED.**  
If swallowed, do not induce vomiting but call a physician. Vomiting may be harmful. Keep out of eyes. May cause eye damage or skin irritation. If contact with eyes occurs, flush with water immediately. Get medical attention. Avoid contamination of food.

For detailed information on the toxicological properties of Hercules pine oils, request Bulletin T-103A.

**OSHA Classification**

As Hercules interprets the Occupational Safety and Health Act of 1970, Yarmor 302 and 302W and Herco grade pine oils are hazardous materials because they are combustible (TCC flash points 170, 130, and 150°F [77, 54, and 66°C], respectively). Material Safety Data Sheets are available.

**Container Disposal**

Rinse empty containers thoroughly with soap and water before discarding. For bulk containers, flush thoroughly with soap and water before reuse.

## PIONEER GERMICIDAL CLEANER

is an excellent bactericide, fungicide, tuberculocide, obtained by the controlled blending of chlorophenols and synthetic detergents.

is effective against antibiotic resistant Staphylococcus strains in dilutions up to 1:100.

is effective against mycobacterium tuberculosis var. hominis at dilutions up to 1:50.

is non-staining, will clean woodwork, walls, floors, towels, linens, etc. when used as directed.

is naturally scented. Leaves the area or material cleaned virtually odorless.

### Active Ingredients:

4-chloro-2-cyclopentylphenol	3.0%
isopropyl alcohol	1.0%
sodium ethylene diamine tetraacetate	0.5%
chlorophenylphenol	0.1%
sodium phenylphenate	0.1%
Inert Ingredients:*	95.3%

Total Ingredients: 100.0%

\*includes phosphate builders and anionic synthetic detergents.

TUBERCULOCIDAL

FUNGICIDAL

BACTERICIDAL

# *Pioneer* *Germicidal Cleaner*

U.S.D.A. Registration No. 892-23

### CAUTION:

HARMFUL IF SWALLOWED. AVOID CONTACT WITH SKIN AND EYES.  
KEEP OUT OF CHILDREN'S REACH

### Phenol Coefficient A.O.A.C. Method

5.9 Staphylococcus aureus

6.9 Salmonella typhosa

net contents one gallon

THE  *Pioneer*  *Since 1905* **MANUFACTURING** CO

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