

**DIRECTIONS**

**FARM BULK TANKS, MILKING UTENSILS AND EQUIPMENT, BEVERAGE AND FOOD PROCESSING EQUIPMENT**

**A. Clean equipment immediately after use.**

1. **Rinse**—with clean water, not hot.
2. **Wash**—with Adage solution, 1 oz. to 5 gal. of water (25 ppm of available iodine).
3. **Rinse**—with clean water.
4. **Air Dry**—protect from dust and dirt.

**B. Sanitize** immediately before re-use, with Adage solution, ½ oz. to 5 gal. of water (12½ ppm available iodine).

For sanitizing by spray, use Adage at 1 oz. per 5 gal. of water (25 ppm available iodine).

**UDDER WASHING**

1. Wash udder before milking with Adage solution, 1 oz. to 5 gal. of lukewarm water (25 ppm available iodine). Use an approved udder towel.
2. Use clean single service towel for drying.

Adage fulfills the criteria of Appendix F, the Grade "A" Pasteurized Milk Ordinance 1965 recommendations of the United States Public Health Service when tested by the Chambers Method.

U.S.D.A. REG. NO. 662-47.

Wyandotte™

**ADAGE**

TRADEMARK

**Iodine Detergent Germicide**

**ACTIVE INGREDIENTS**

Sulfuric Acid.....	7.48%
Phosphoric Acid.....	5.25%
Alkyl (C <sub>10</sub> -C <sub>12</sub> ) polyethoxypolypropoxyethanol-iodine complex (providing 1.75% Titratable Iodine).....	24.70%
Inert Ingredients.....	62.57%
TOTAL.....	100.00%

**A.O.A.C. USE-DILUTION**

Staphylococcus aureus.....	1:640
Salmonella choleraesuis.....	1:640
Pseudomonas aeruginosa.....	1:640

**RINSE EMPTY CONTAINER THOROUGHLY WITH WATER AND DISCARD IT**

**WARNING** KEEP OUT OF REACH OF CHILDREN  
SEE WARNING TEXT ON RIGHT SIDE PANEL  
FOR INDUSTRIAL USE ONLY

**CONTENTS ONE GALLON**

**BASF**



**BASF Wyandotte Corporation**  
Chemical Specialties Division  
Wyandotte, Michigan 48192

662-47  
Comments

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**USE DILUTIONS**

Application	Fluid Ounces		p.p.m. Available Iodine
	per 5 gal.	per 100 gal.	
Sanitizing of cleaned equipment	½	10	12½
Cleaning	1	20	25
Disinfecting of cleaned equipment	1	20	25
Sanitizing by spraying	1	20	25
Udder washing	1	20	25

Solutions of Adage must be made with water under 120° F.

Yellow color indicates presence of available iodine. When color fades, renew solutions.

**WARNING**

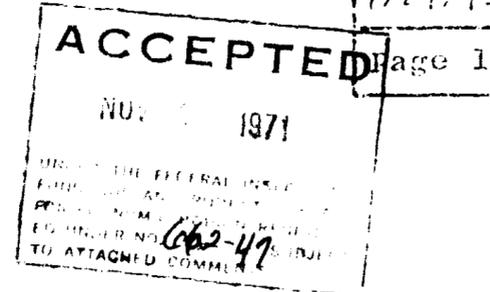
**CORROSIVE: KEEP OUT OF REACH OF CHILDREN**  
May be fatal if swallowed. Do not breathe vapor or fumes. May produce chemical burns. Do not get in eyes, on skin, or on clothing.

**ANTIDOTE**

**INTERNAL**—Call a physician immediately. Drink a teaspoonful or more of magnesia, chalk, or small pieces of soap, softened with water in milk or raw egg white.

**EXTERNAL**—Eyes—Wash with water for 15 minutes. Get prompt medical attention. Skin—wipe off the acid gently, immediately flood the surface with water, using soap freely, then cover with moist magnesia or baking soda.

TECHNICAL  
SERVICE  
BULLETINS



J. B. FORD DIVISION  
Wyandotte, Michigan

WYANDOTTE CHEMICALS CORPORATION

ADAGE

Iodine Detergent - Sanitizer & Germicide

PURPOSE AND USE

For sanitizing all types of food and beverage equipment in dairies, dairy farms, food plants, breweries.

NOT TO BE USED AS A TEAT DIP

ADVANTAGES OF ADAGE

1. Rapid sanitizing action.
2. Effective in hard water, even up to 32 grains per gallon hardness.
3. Safe on 300 and 400 Series stainless steel when used as directed.
4. Low odor level.
5. Shows up dirty equipment by coloring milkstone or other films.
6. Adage is registered with the United States Department of Agriculture. Registration No. \_\_\_\_\_.

EFFECTIVENESS

Adage is a germicide. A germicide is superior to a sanitizer because in the standard laboratory test (AOAC Use-Dilution Test) a germicide must destroy all of the standard test organisms, whereas in the AOAC Germicidal and Detergent Sanitizer Method a sanitizer reduces the bacterial population to a level recognized as relatively safe in terms of public health requirements. Use-Dilution Test results indicate that Adage at 25 ppm destroys the organisms shown on Table I. Adage also passes the Chambers Test. See Table II.

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TABLE I  
AOAC USE DILUTION TEST - 10th ED., 1965  
 Adage at 1 Oz./5 Gal. (25 ppm Av.I<sub>2</sub>)

<u>Organism</u>	<u>Phenol Resistance of Organisms</u>	<u>Number of Tests Showing Complete Destruction of Organisms</u>
<u>Staphylococcus aureus</u> (ATCC 6538)	1:60	10/10
<u>Pseudomonas aeruginosa</u> (ATCC 15442)	1:80	10/10
<u>Salmonella choleraesuis</u> (ATCC 10708)	1:90	10/10

TABLE II

WEBER-BLACK METHOD AND CHAMBERS MODIFICATION OF WEBER-BLACK METHOD (U.S.P.H.S.)

Minimum Time (in Seconds) to Obtain 99.999% Kill  
of Various Test Organisms with Adage

<u>Test Organism</u>	<u>Distilled Water</u>			<u>Hard Water (500 ppm)</u>			<u>Hard Water (500 ppm)</u>	
	<u>ppm Titratable Iodine</u>			<u>ppm Titratable Iodine</u>			<u>Whole Milk Added</u>	
	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>1.0%</u>	<u>0.1%</u>
	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>ppm Titratable Iodine</u>	<u>ppm Titratable Iodine</u>
<u>Staphylococcus aureus</u> (ATCC 6538)	15	15	30	15	15	30	30	30
<u>Pseudomonas aeruginosa</u> (ATCC 15442)	15	15	15	15	15	15	60	30
<u>Salmonella Typhosa</u> Hopkins Strain 26 (FDA)	15	15	15	15	15	15	30	30
<u>Escherichia Coli</u> (ATCC 11229)	15	15	30	15	15	30	60	60

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Solutions of Adage are normally recommended in concentrations of 12-1/2 to 25 ppm titratable iodine. Either concentration is more effective than 200 ppm available chlorine as hypochlorite as determined by the Available Chlorine Germicidal Equivalent Concentration Method (See Table II).

Results of tests made by an independent laboratory showed that 12-1/2 ppm titratable iodine from Adage destroys approximately twice the number of *Salmonella typhosa* organisms as 100 ppm of chlorine obtained from sodium hypochlorite under equal conditions. (See Table III).

TABLE III

COMPARISON OF ADAGE WITH SODIUM HYPOCHLORITE BY THE AVAILABLE CHLORINE GERMICIDAL EQUIVALENT CONCENTRATION METHOD - AOAC 10th Ed., 1965

Test Organism	Increments of Culture Disinfected					
	Adage			Sodium Hypochlorite		
	ppm Titratable Iodine			ppm Available Chlorine		
	25	12.5	6.25	200	100	50
<u>Staphylococcus aureus</u> (ATCC 6538)	10 8	3 3	1 1	3 3	2 2	1 0
<u>Pseudomonas aeruginosa</u> (ATCC 15442)	9 9	6 5	2 1	2 3	2 1	1 1
<u>Salmonella Typhosa</u> Hopkins Strain 26 (FDA)	10 10	6 6	3 2	6 6	3 4	2 2

Adage is as effective in hard water (500 ppm) against four commonly selected test organisms as it is in distilled water. Even when 1% whole milk is added, Adage is still effective; although, 30 to 60 seconds are required to obtain the desired kill rather than 15 seconds without organic matter present. (See Table II).

#### CORROSION

Adage is safe to use on stainless steel.

Adage, like other iodine products, is not recommended for aluminum, dairy tin, brass, chrome plate, or copper, unless exposure time is very short.

USE DIRECTIONS

Farm Bulk Tanks, Milking Utensils and Equipment, Beverage and Food Processing Equipment:

- A. Clean equipment immediately after use.
1. Rinse - with clean water, not hot.
  2. Wash - with Adage solution, 1 oz. to 5 gallons of water (25 ppm of titratable iodine).
  3. Rinse - with clean water.
  4. Air dry - protect from dust and dirt.
- B. Sanitize immediately before re-use, with Adage solution, 1/2 ounce to 5 gallons of water (12-1/2 ppm titratable iodine).

For sanitizing by spray, use Adage at 1 ounce per 5 gallons of water (25 ppm titratable iodine).

Use Dilutions:

<u>Application</u>	<u>Fluid ounces per</u>		<u>ppm</u> <u>Titratable Iodine</u>
	<u>5 Gal.</u>	<u>100 Gal.</u>	
Sanitizing of cleaned equipment	1/2	10	12-1/2
cleaning	1	20	25
Disinfecting of cleaned equipment	1	20	25
Sanitizing by spraying	1	20	25

Solutions of Adage must be made with water under 120°F.

In waters over 32 grains per gallon hardness, use sufficient Adage to obtain a pH between 2 and 4 in use solutions.

PHYSICAL PROPERTIES

Adage is a dark brown, non-viscous liquid, having a slight characteristic odor. It is stable up to 120°F. When dissolved in water, solutions in use concentrations are yellow in color.

Adage will freeze at approximately the same temperature as water but, after melting, returns to its original condition with no loss of effectiveness.

CHEMICAL PROPERTIES

The pH of a 25 ppm solution (1 oz. of Adage in 5 gallons of soft water) is 2.6.

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CHEMICAL PROPERTIES (Continued)

Titrateable iodine is 1.75% minimum, specific gravity at 25°C. is 1.084, and the viscosity is about the same as water.

Active Ingredients:

Sulfuric Acid . . . . . 7.48%  
Phosphoric Acid . . . . . 5.25%  
Alkyl (C<sub>10</sub> - C<sub>12</sub>) Polyethoxypolypropoxyethanol  
Iodine Complex (Providing 1.75% Titratable Iodine) . . . . . 24.70%

Inert Ingredients . . . . . 62.57%

TOTAL . . . . . 100.00%

CAUTION - WARNING

**CORROSIVE: KEEP OUT OF REACH OF CHILDREN.**  
May be fatal if swallowed. Do not breathe vapor or fumes. May produce chemical burns. Do not get in eyes, on skin, or on clothing. Rinse empty container thoroughly with water and discard it.

ANTIDOTE

**INTERNAL -** Call a physician immediately. Drink a teaspoonful or more of magnesia, chalk, or small pieces of soap, softened with water in milk or raw egg white.

**EXTERNAL - Eyes-**Wash with water for 15 minutes. Get prompt medical attention. **Skin -** wipe off the acid gently, immediately flood the surface with water, using soap freely, then cover with moist magnesia or baking soda.

TITRATABLE IODINE DETERMINATION

The Wyandotte Iodine Test Kit should be used for determining the titrateable iodine in use solutions.

TEST KIT PROCEDURE

1. Measure 200 mls. of use solution in a bottle (8 oz. bottle is suitable).
2. Add 3 spoonfuls of Reagent A and invert sample three times. If dark iodine color does not appear, insufficient iodine is present for effective germicidal action.
3. Add Reagent C drop by drop, holding the dropper at an angle of 45°. Shake solution after each dilution.
4. The endpoint is reached when addition of a drop of Reagent C causes a color change from pale yellow to colorless.

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5. To determine the titratable iodine in use solutions, the following formula should be used:

Number of drops of Reagent C x 2.1 = ppm titratable iodine

Example: Size of sample --- 200 ml.  
Number of drops of Reagent C --- 12  
Calculation: 12 x 2.1 = 25 ppm titratable iodine