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## TECHNICAL DATA

### E-Kleen™ 166

#### **Soak, Spray, and Ransohoff Cleaner for All Metals**

**E-Kleen 166** is a heavy duty alkaline spray, liquid detergent formulation which is very effective in removing baked on carbon, cutting oils, waxes, buffing compounds and other soils

It contains no chelaters and phosphates, which makes waste treatment easy.

**E-Kleen 166** is low-foaming and is ideal for cleaning metal parts in high pressure spray washing and Ransohoff machines. Its surfactants penetrate and loosen stubborn soils which are then swept away in the rinse stage.

**E-Kleen 166** is a low caustic and non-emulsifiable (floats oil) cleaner.

**E-Kleen 166** has replaced other cleaners lasting almost twice as long as competitive cleaners. Temperature is important for effective cleaning. **Do not exceed 150°F**. Higher temperatures will decrease the effectiveness of the cleaner.

#### **OPERATING PARAMETERS**

Concentration:	Ultrasonic Cleaning:	1 to 8% by volume in water
	Soak Cleaning:	5 to 12% by volume in water
	Spray Cleaning:	0.5 to 3% by volume in water
	Ransohoff Cleaning:	3 to 9% by volume in water
Temperature:	100°F to 150°F	

The required cleaning time will depend upon the type and degree of soil present on the metal surfaces and on the concentration and temperature of the **E-Kleen 166** solution.

#### **EQUIPMENT**

Tanks may be constructed of mild steel or stainless steel. Racks, baskets and barrels must be compatible with other metal finishing solutions used thereafter. Do not use galvanized steel, bronze, copper, tin or aluminum. Immersion heaters may be of mild steel. Adequate forced ventilation must be provided if misting is present.

#### **SOLUTION MAKE-UP**

Mix the **E-Kleen 166** liquid concentrate with water as listed above.

The **E-Kleen 166** working solution concentration is maintained with periodic additions of the liquid concentrate to replace that consumed by removing soils or due to drag out in soak cleaning operations. The strength of the working solution is determined chemically with either a burette titration or dropping bottle test. When the cleaning solution becomes excessively contaminated with soils it should be dumped and a new solution made up.

## **SOLUTION CONTROL**

### **A. Burette Titration Method**

1. Take a sample of the **E-Kleen 166** solution and allow to cool to room temperature.
2. Pipet a 10 ml sample into a clean 125 ml Erlenmeyer flask. Add 50 ml of water.
3. Add 4 drops of Phenolphthalein Indicator to produce pink color.

Titrate with 0.1N Hydrochloric Acid from pink to colorless.

$$\text{Concentration of E-Kleen 166 (\% by volume)} = (\text{ml of Acid}) \times 1.043.$$

### **B. Dropping Bottle Method**

1. Measure a 20 ml sample of the **E-Kleen 166** solution with a 25 ml graduated cylinder and add along with 50 ml of water to a 125 ml Erlenmeyer flask.
2. Add 4 to 7 drops of Phenolphthalein Indicator to produce a pink colored solution.
3. Add dropwise 5N Sulfuric Acid from a dropping bottle while counting the drops and swirling the solution.

Stop adding drops when solution suddenly changes color from pink to colorless.

$$\text{Concentration E-Kleen 166 (\% by volume)} = \text{number drops 5N Sulfuric Acid} \times 1.00.$$

**Note:** When using **E-Kleen 166** at low concentrations of 0.5 to 2.0% as a spray cleaner, use **1N** Sulfuric Acid in the dropping bottle.

**Calculation:** with **1N** Sulfuric Acid:

**Concentration E-Kleen 166** = number of drops 1N Acid x 0.200. The **1N** Sulfuric Acid may also be used with the stronger solutions of 4 to 8% for example, but the number of drops will be in the range of 25 to 50 whereas with 5N the drops will be on the order of 5 to 10.

## **CAUTION**

**E-Kleen 166** and its solutions are mildly alkaline. Do not get in eyes, on skin or clothing. Avoid breathing dusts or mists. Do not take internally. When handling, wear goggles or face shield. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, call a physician.

**Do not** mix **E-Kleen 166** with acidic materials, or any other chemical substances.

**Do Not** work with **E-Kleen 166** without first reading and understanding the **MATERIAL SAFETY DATA SHEET** furnished by **EPI**.

## **PACKAGING**

Five (5) and 55 gallon non-returnable containers.

## **IMPORTANT NOTICE! For Industrial Use Only**

The following is made in lieu of all warranties, expressed or implied, including the implied warranties of merchantability and fitness for purpose: seller's and manufacturer's only obligation shall be to replace such quantity of the product as proved to be defective. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. **Neither seller nor manufacturer shall be liable either in tort or in contract for any loss or damage, direct, incidental or consequential, arising out of the use or the inability to use the product.**

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