CHEMKLEEN 163

PRETREATMENT TECHNICAL DATA SHEET

LIQUID ALKALINE CLEANER

PRODUCT DESCRIPTION

CHEMKLEEN 163 is a liquid; biodegradable alkaline cleaner specifically formulated to prepare metal surfaces to receive a uniform and dense phosphate coating.

TECHNICAL PROPERTIES

Composition:	Liquid
Appearance:	Slight Amber Color
Recommended Concentrations:	1.0-3.0% by volume
Recommended Temperatures:	130^0F-150^0F
Recommended Time:	Spray: 60 seconds Immersion: 60-120 seconds

PRODUCT ADVANTAGES

- The surfactant system is completely biodegradable
- Easily dispersed in water; there are no problems with dissolving this cleaner as encountered with powdered cleaners; it eliminates the need for a slurry tank
- Cleaner concentration can be controlled easily through the use of metering equipment
- Efficient cleaning in both immersion and spray applications
- Used in any tri-metal processing system

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USE & CONTROL INSTRUCTIONS:

Operating Properties (Typical):

APPLICATION:	SPRAY OR IMMERSION
OPERATING CONCENTRATIONS:	1.0 - 3.0 %VOLUME
OPERATING TEMPERATURE:	130° - 160°F
OPERATING TIME:	SPRAY - 60 SECONDS MINIMUM IMMERSION – 60 – 120 SECONDS

Charge Instructions:

For a 2% charge - add 20 gallons of **CHEMKLEEN 163** per 1000 gallons of tank volume.

Charge Details:

1) Fill stage tank 3/4 full of fresh cold water.
2) Immediately start heating water to a minimum of 130°F.
3) After temperature rises to 130°F - Turn on the spray pumps or circulating pumps and slowly add the **CHEMKLEEN 163** to the bath and mix well. Add the required amount of **CHEMKLEEN 163** to the stage tank close to the circulating pump intake for adequate mixing.
4) For each percent by volume of concentration, add 10 gallons of **CHEMKLEEN 163** per 1000 gallons of tank volume.
5) After chemical has been added, fill remainder of tank with water to bring up to the required solution level.

RINSE CONDITIONER must be used in the water rinse preceding phosphate whenever **CHEMKLEEN 163** is used on a zinc phosphate line. RINSE CONDITIONER is not required when an iron phosphate system is used.

Analysis Procedures:

The Control Procedures described in the following section may determine the desired concentration of the **CHEMKLEEN 163**. The optimum cleaning concentration for your system will be determined by your PPG representative and will be based on the conditions found in your own plant (spray or immersion cleaning, amount of oil on parts, type of oils used, etc.)

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Equipment needed:

- 25 milliliter pipette
- Pipette bulb
- 250 milliliter flask or beaker
- Auto burette

Reagents needed:

- Phenolphthalein Indicator
- Bromocresol Green Indicator
- 0.1 Normal Sulfuric acid

Procedure:

CAUTION: DO NOT PIPETTE BY MOUTH!

Free Alkalinity

1. Pipette a 25 ml. sample of the operating bath into a 250 ml beaker.
2. Add 5 drops of Phenolphthalein.
3. Titrate with 0.1 Normal Sulfuric Acid until the solution changes from pink to colorless.
4. The milliliters of 0.1 Normal Sulfuric Acid used are recorded as points of Free Alkalinity.

Total Alkalinity (optional)

1. To the same sample, add 5 drops of Bromocresol Green and continue the titration with 0.1 Normal Sulfuric Acid until the solution color changes from blue to yellow-green.
2. The total milliliters of 0.1Normal Sulfuric Acid used are recorded as the level of Total Alkalinity.

Comments:

As the cleaner bath is used, the Total Alkalinity will rise, representing a gradual loading of the cleaner bath with contaminants. The Total Alkalinity/Free Alkalinity ratio can therefore be used as an indicator of the proper time to dump and recharge the cleaner tank. The initial Alkalinity Ratio is 2.0/1. There is no definite ratio, which is applicable to all systems. Your PPG representative will work with you in determining the optimum dump and recharge cycle for your system, based on your own special operating conditions.

Calculation:

Points of Free Alkalinity X 0.31 = Concentration of **CHEMKLEEN 163** in percent by volume

Concentration % by volume	Free Alkalinity
0.5 %	1.8 points
1.0 %	3.4 points
1.5 %	4.9 points
2.0 %	6.5 points
2.5 %	8.1 points
3.0 %	9.8 points

CHEMKLEEN 163 Replenishment

The addition of 10.0 gallons of **CHEMKLEEN 163** per 1000 gallons of solution will increase the concentration by 1% volume.

Equipment:

All tanks and equipment, except for phosphate and pickle stages, may be constructed of mild steel. The phosphate stage may be constructed of 3/8" mild steel; however, for prolonged life, 316 stainless steel is recommended.

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