

# CEE-BEE J-84AL

by *Cee-Bee*<sup>®</sup>



## d a t a s h e e t

**CEE-BEE J-84AL** is a highly alkaline liquid cleaner concentrate used for removing rust, heat scale, water scale, carbon, oil, and coatings.

### BENEFITS

- Rapidly removes rust, other metallic oxides, and heavy carbon deposits.
- Quickly dissolves water scale, provides good oil and grease removal, and strips many paints, varnishes and synthetic coatings.
- Excellent for use in ultrasonic cleaning equipment.
- Safe on steel, cast iron, noble metals, and super alloys. May be used on titanium for a limited immersion time.

### CONFORMS TO

- **AMS 1379A**
- **CFM CP2006**
- **GENERAL ELECTRIC C04-049**
- **HONEYWELL SPM NO. 20-94/70-94**
- **INTERNATIONAL AERO ENGINES OMAT 01-188**
- **PRATT & WHITNEY SPMC 91 (SPS 91-1) (SPS 158-8)**
- **ROLLS ROYCE OMAT 173J**
- **SNECMA**
- **T.O. 2-1-111, SPMC 2**

**NOTE: To place an order call, FAX or Email Customer Service at  
800-932-7006 / FAX 1-888-497-6161  
Email [orders@mcgean.com](mailto:orders@mcgean.com)  
Cee-Bee J-84AL Product Code # 26036**



## NOTES PRIOR TO HANDLING

**Before using any Cee-Bee Aviation product, all safety and operating instructions should be read and understood. If you have any questions, please contact your Cee-Bee Aviation representative before proceeding.**

## USE PROCEDURES

**USE 316 STAINLESS STEEL TANKS AND HEATERS WITH THIS PRODUCT. ALSO USE MECHANICAL AGITATION.**

Fill the tank about one-half full with water. Since heat will be generated when Cee-Bee J-84AL is added to the water, add slowly and cautiously with constant and efficient mixing to avoid boiling and splashing. Add remaining water and continue mixing.

### **For Steel Parts:**

- Immerse the parts in a 40 to 48 oz/gal J-84AL (30-37% by volume) bath at 190-200 degrees F.(85-95 degrees C.) for 60 minutes.
- Remove the parts and allow excess cleaner to drain back into the tank. To reduce drag-out loss, rinse with a light mist of water over the tank, then dip in air agitated, overflowing clear water. If required, rinse with high pressure water.
- To protect ferrous parts from flash rusting, force-dry with hot air or use a rust inhibitor, like Cee-Bee Nortex 3025.

Note: GE, SNECMA and CFM allow 25 - 37% by volume.

### **Ultrasonic Cleaning:**

- Use at 10-15% J-84AL by volume in water, (13-20 fl. oz/gal) (98-150 g/l), at 160-170 degrees F. (70-75 degrees C.). Higher concentrations and/or temperatures will reduce effectiveness.
- Cavitation begins at about 160 degrees F. (70 degrees C.)
- Turn the unit on when the bath nears this temperature.
- Position parts in the tank to receive maximum cavitation.
- When clean, remove and rinse with high pressure water or dip the parts in air-agitated, overflowing, clear water.

**USE PROCEDURES (continued)****For Titanium Parts: A Quick Soak:**

- Immerse the parts in a 40 to 48 fl. oz/gal., (30-37%) (300-360 g/l), J-84AL bath at 190-200 degrees F. (88-93 degrees C.) for up to 4 minutes. **DO NOT ALLOW TITANIUM PARTS TO SOAK LONGER THAN 4 MINUTES IN THIS SOLUTION.** Longer exposure can result in prohibitive stock loss.
- Remove parts and allow excess cleaner to drain back into the tank, then rinse with a light mist of water over the tank to reduce drag-out loss. Dip rinse the parts and if required, rinse with high pressure water.

**For Titanium Parts, a Slow Soak:**

- Immerse the parts in a 12 to 16 oz/gal., (90-120 g/l) (9.3-12.3%), J-84AL bath at 160-170 degrees F., (71-77 degrees C.) for up to 30 minutes. This solution should be designated as "TITANIUM CLEANING ONLY". **At this concentration, cleaning action will be slower, but metal stock loss will not be critical.**
- When cleaning is complete, remove the parts and allow excess cleaner to drain back into the tank.
- Rinse with a light mist over the tank, dip rinse and then if required, rinse with high pressure water.

A carbonate sludge will accumulate on the bottom of the tank. Periodic desludging will extend the useful life of the bath.

Bath will etch zinc, lead and aluminum. When contaminated with these metals, bath effectiveness is greatly reduced and, in some cases, the bath will deposit a tenacious black smut on steel parts. If auto-deposition occurs, dump the tank and recharge with fresh material.

## CONTROL

- Daily additions of water are required to make up evaporation losses. In hard water areas, soft water is recommended. Periodic additions of Cee-Bee J-84AL and optionally Cee-Bee Additive GO-2L are needed to replace dragout loss and active ingredients consumed during the cleaning process. To determine concentrations use the following procedures.

### REAGENTS & EQUIPMENT

#### ALKALINITY TEST

Deionized or distilled water	250 ml Erlenmeyer flask
1 normal sulfuric acid	50 ml beaker
Phenolphthalein indicator	5 ml volumetric pipette

#### SEQUESTERANT TEST

Glass thermometer: range 0-230 deg.F	50 ml grad.cylinder
Water bath @ 180 deg.F., or hot plate	50 ml burette
High intensity lamp (like a Tensor)	20 ml pipette
Coarse filter paper	5 ml grad.pipette
50% Sodium Hydroxide (NaOH)	
ferric chloride hexahydrate (FeCl <sub>3</sub> ·6H <sub>2</sub> O) 1M, (270 g/l)	

#### **Part I: ALKALINITY**

1. Pipette a 5.0 ml sample of the bath into a 250 ml Erlenmeyer flask.
2. Dilute to 100 ml with DI water and 3 drops phenolphthalein indicator. For very dark tank solutions, additional phenolphthalein indicator solutions may be needed to clarify the endpoint.
3. Titrate with 1 normal sulfuric acid until the pink color just disappears.

#### ALKALINITY CALCULATIONS:

\*\*\***(mls of 1N acid) x (1.6) = fl. oz./gl. of J-84AL, based on alkalinity**

\*\*\***[(fl.oz/gl J-84AL @ desired level) - (fl.oz/gl based on alk.)] x (0.78) =**  
**(gallons of J-84AL required for 100 gallons of tank solution)**

\*\*\***oz/gal x 7.7 = ml/liter**

**CONTROL (continued)****Part II: CONCENTRATION BASED ON SEQUESTERANT (OPTIONAL)**

1. If heavily contaminated, filter sample through coarse filter paper to remove suspended solids.
2. Pipette 20 ml sample into 100 ml graduated cylinder.
3. If Alkalinity titration (Part 1) is less than 29 ml 1N acid (or 10 ml for low concentration tanks), add 50% NaOH as determined below and mix well.  
(29 – ml 1N acid consumed) X 0.21 – ml 50% NaOH required.  
(10 – ml 1N acid consumed) X 0.21 – ml 50% NaOH required.
4. Heat sample in hot water bath to 180°F.
5. Remove sample from bath and add Ferric chloride solution in 1 ml increments. Stopper, shake 30 seconds and examine for undissolved precipitate using high intensity lamp. Once precipitate is present, place sample back in hot water bath and heat.
6. After reheating, remove sample from bath stopper, shake 30 seconds (wait for any precipitate that may be caught in foam to settle out) and examine for red undissolved precipitate.
7. Repeat steps 5 through 6 to end point where a large volume of undissolved red precipitate is present in the bottom of cylinder. 1 to 2 small particles is not the end point. After end point is reached, calculate as follows:

**SEQUESTERANT CALCULATIONS:**

\*\*\* $(\text{mls of 1M FeCl}_3) \times (4.8) = \text{fl.oz/gal J-84AL based on sequesterant}$

\*\*\* $[\text{J-84AL based on alk.}] - (\text{fl.oz/gal J-84AL based on sequest.}) \times (0.43) =$

(gallons of Cee-Bee Additive GO-2L, required per 100 gals of the J-84AL bath)

\*\*\* $\text{oz/gal} \times 7.7 = \text{ml/liter}$