

Cee-Bee® J-84AL

Cee-Bee® J-84AL is a concentrated, highly-alkaline liquid cleaner used for removing rust, high-temperature oxides, carbon, dry film lubricant and aluminized paints from hot section turbine engine components. Cee-Bee® J-84AL is typically used in multi-step cleaning processes in conjunction with Super Bee™ 300LF/G or Cee-Bee® A-7X7 aqueous degreasers, Cee-Bee® J-88L alkaline permanganate and Cee-Bee® J-3 and/or Cee-Bee® C-623 acid descalers.

Conforms To

- Airbus
- AMS
- ARP
- CFM56
- General Electric
- Honeywell
- Military
- Pratt & Whitney
- Rolls Royce
- Snecma

Full Approval Listing on Page 2

Benefits

- Effectively removes rust, high-temperature oxides and carbon deposits.
- Safe and effective cleaner for titanium alloys when used as directed.
- Excellent performance in ultrasonic cleaning equipment.
- Removes dry film lubricant and aluminized paints.
- Safe on steel, most copper alloys, chromium, magnesium, titanium, cadmium, nickel, cobalt and their alloys.

Properties

- Clear to hazy, straw-colored liquid
- Highly alkaline

Notes Prior to Handling

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

Conforms To (Continued)

- Airbus
 - Application Code: 08CJA1
 - CML 11-033
 - Product Code: 867900
- AMS
 - AMS 1379A
- ARP
 - ARP 1755
- CFM56
 - CP 2006
- General Electric
 - C04-049
- Honeywell
 - SPM NO. 20-94/70-94
- Military
 - T.O. 2-1-111
- Pratt & Whitney
 - PMC 1334
 - SPMC 91
 - SPS 158-8
 - SPS 91-1
- Rolls Royce
 - OMat 173J
- Snecma
 - DMP 12-056
 - DMP 13-250

Use Procedure

Tank Recommendation

- Use 316 stainless steel tanks and heaters with this product.
- Use mechanical agitation.

Steel, Nickel and Cobalt Parts

1. Degrease parts using Super Bee™ 300LF/G or Cee-Bee® A-7X7 aqueous cleaners.
2. Immerse parts in a 30-37%-by volume Cee-Bee® J-84AL bath at 180-200°F (82-93°C). Remove the parts and pressure spray rinse with cold water over the Cee-Bee® J-84AL solution tank.
 - a. **NOTE:** If parts are heavily scaled, parts can be removed from the solution up to two times during the cleaning cycle (maximum of 60 minutes) to pressure spray rinse degraded scale.
3. Immerse parts fully into clean, cold water, then pressure spray rinse.
4. To protect ferrous parts from flash rusting, immerse parts fully in final, heated rinse water bath containing Cee-Bee® Nortex 3025 rust inhibitor heated to 150-170°F (66-77°C) until the part reaches the water temperature.

Note:

- GE, Snecma and CFM allow 25 - 37% by volume.

Use Procedure (Continued)

Ultrasonic Cleaning

1. Use at 10-15% Cee-Bee[®] J-84AL by volume in water at 160-170°F (70-75°C). Higher concentrations and/or temperatures will reduce effectiveness.
2. Cavitation begins at about 160°F (70°C).
3. Turn the unit on when the bath nears this temperature.
4. Position parts in the tank to receive maximum cavitation.
5. When clean, remove and rinse with high pressure water or dip the parts in air-agitated, overflowing, clear water.

Titanium Parts: A Short Soak

NOTE: Tank must be dedicated for "Titanium Only"

1. Degrease parts using Super Bee[™] 300LF/G or Cee-Bee[®] A-7X7 aqueous cleaners.
2. Immerse parts in a 30-37%-by volume Cee-Bee[®] J-84AL bath at 180-200°F (82-93°C) for 1-4 minutes. Remove the parts and pressure spray rinse with cold water over the Cee-Bee[®] J-84AL solution tank.
3. Immerse parts fully into clean, cold water, then pressure spray rinse. If parts are not clean, scrub with an approved brush or scrub pad.
4. Immerse parts fully in hot water at 150-200°F (66-93°C) until the parts reach the water temperature to flash dry.

Titanium Parts: A Long Soak

NOTE: Tank must be dedicated for "Titanium Only"

1. Degrease parts using Super Bee[™] 300LF/G or Cee-Bee[®] A-7X7 aqueous cleaner.
2. Immerse parts in an 8-13%-by volume Cee-Bee[®] J-84AL bath at 160-170°F (71-77°C) for 15-30 minutes. Remove the parts and pressure spray rinse with cold water over the Cee-Bee[®] J-84AL solution tank.
3. Immerse parts fully into clean, cold water, then pressure spray rinse. If parts are not clean, scrub with an approved brush or scrub pad.
4. Immerse parts fully in hot water at 150-200°F (66-93°C) until the parts reach the water temperature to flash dry.

Use Procedure (Continued)

Note

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



Solution 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.

Alkalinity Test

Reagents & Equipment

- Deionized or Distilled water
- 1 Normal Sulfuric Acid
- Phenolphthalein Indicator
- 250 ml Erlenmeyer Flask
- 50 ml Beaker
- 5 ml Volumetric Pipette

Alkalinity Test Procedure

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

ml 1N acid x 1.255 = % Cee-Bee[®] J-84AL based on alkalinity

(% Cee-Bee[®] J-84AL @ desired operating level - % based on alkalinity) = % Cee-Bee[®] J-84AL required

Solution Control (Continued)

Concentration Based on Sequestrant (Optional)

Reagents & Equipment

- Glass Thermometer: 0-230°F (
- Water Bath @ 180°F, or Hot Plate
- High Intensity Lamp (like a Tensor)
- Coarse Filter Paper
- 50% Sodium Hydroxide (NaOH)
- Ferric Chloride Hexahydrate
 - (FeCl₃·6H₂O) 1M, (270 g/l)
- 50 ml Graduated Cylinder
- 50 ml Burette
- 20 ml Pipette
- 5 ml Graduated Pipette

Sequestrant Test Procedure

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.
 - a. (29 – ml 1N acid consumed) X 0.21 – ml 50% NaOH required.
 - b. (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:

Sequestrant Calculations

ml 1M Ferric chloride solution X 3.7 = % Cee-Bee[®] J-84AL based on sequestrant.

(% Cee-Bee[®] J-84AL based on alkalinity) - (% Cee-Bee[®] J-84AL based on sequestrant) X 0.6 =
% Cee-Bee[®] Additive GO-2L.

Contact Us

United States

McGean

Phone: +1-216-441-4900

Fax: +1-216-441-1377

Email: Aviation@McGean.com

United Kingdom

McGean-Rohco (UK) Ltd.

Phone: +44-1902-456563

Fax: +44-1902-457443

Email: Aviation@McGean-Rohco.co.uk

Singapore

McGean Singapore

Phone: +65-6863-2296

Fax: +65-6863-2297

Email: Info@ceebee.com.sg

China

Cee-Bee Aviation Materials (Xiamen) Co. Ltd.

Phone: +86-592-551-3689

Email: Info@ceebee.com.cn

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Revision: 09/2024 (Rev. A4)