

## Cee-Bee® J-88L

**Cee-Bee® J-88L** is a liquid alkaline permanganate scale conditioner used in various multi-step turbine engine cleaning processes. Cee-Bee® J-88L is typically used in conjunction with Super Bee™ 300LF/G, Cee-Bee® J-84AL, Cee-Bee® J-3 and Cee-Bee® C-623.

### **Conforms To**

- AMS
  - 1383A (Includes ARP 1755B)
- CFM
  - CP 2008
- General Electric
  - C04-055
- International Aero Engines (IAE)
  - OMat 01-165A
- Military
  - T.O. 2-1-111
- Pratt & Whitney
  - SPMC 16
- Rolls Royce
  - OMat 198C
- Snecma
  - DMP 12-056

### **Benefits**

- Cee-Bee® J-88L is a strong oxidizing agent that conditions high-temperature oxides for removal with acid descalers like Cee-Bee® J-3 and C-623.
- Effective in removing coked fuel and oil when used in conjunction with Cee-Bee® J-84AL.
- Conditions Alpha Case scale on titanium alloys when used in conjunction with Cee-Bee® J-84AL prior to acid etching.
- Safe on steel, most copper alloys, chromium, nickel and cobalt and their alloys.

### **Properties**

- Purple to greenish, highly alkaline liquid
- Strongly oxidizing

### **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.

## Use Procedure

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### Tank Recommendation

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

### Operating Procedures

- Please refer to the respective OEM Standard Practice Manuals for the various cleaning and overhaul processes that utilize Cee-Bee<sup>®</sup> J-88L.

## Solution Control

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### Solution Control

1. Daily additions of water are required to make up evaporation losses. In hard water areas, soft water is recommended. Periodic additions of Cee-Bee<sup>®</sup> J-88L and Cee-Bee<sup>®</sup> J-88 Additive PL are required to make up dragout losses and active ingredients consumed during the cleaning process. To determine concentrations, use the procedures below.
2. The control procedures are based on two analyses: alkalinity and permanganate concentration. To properly carry out these straightforward tests you'll need the following equipment and reagents.

### Reagents & Equipment

- |                                |                           |
|--------------------------------|---------------------------|
| • Distilled or Deionized Water | • 500 ml Volumetric flask |
| • 1.0N Sulfuric Acid           | • 250 ml Beaker           |
| • 50% Sulfuric Acid            | • 50 ml Burette           |
| • 0.1N Potassium Permanganate  | • 25 ml Pipette           |
| • 0.1N Sodium Oxalate          | • 10 ml Pipette           |
| • pH Meter                     |                           |

## Solution Control (Continued)

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### Step 1: Concentration Based on Alkalinity

1. Pipette a 5 ml tank sample, heated to 190°F (88°C), into a 100 ml volumetric flask.
2. Dilute with DI water to 100 mls.
3. Pipette 25 ml diluted Cee-Bee<sup>®</sup> J-88L solution into a 250 ml Beaker and dilute to 100 ml with DI water.
4. Titrate with 1 N acid to pH 6.0 using the pH meter. Save solution for step II.

### Calculations

ml 1 N acid X 19.08 = % Cee-Bee<sup>®</sup> J-88L (vol) based on alkalinity

- If Cee-Bee<sup>®</sup> J-88L concentrate based on alkalinity is less than 65% (vol.), raise to 65% (vol.) with additions of Cee-bee<sup>®</sup> J-88L until this value is reached.

### Step 2: Concentration Based on Permanganate

1. Add 10 ml of 50% sulfuric acid to the previously titrated sample from Step I.
2. Heat to approximately 180°F (83°C) and then add exactly 25 ml of freshly standardized 0.1N sodium oxalate solution.
3. If the solution does not decolorize after a few seconds, continue adding exactly 5 mls additional freshly standardized 0.1N sodium oxalate solution until solution decolorizes.
4. When decolorized, IMMEDIATELY back titrate with 0.1N potassium permanganate until faint pink color remains for approximately 30 seconds.

### Calculations

(ml 0.1N sodium oxalate - ml 0.1N potassium permanganate) x 3.52 = % (vol.) Cee-Bee<sup>®</sup> J-88L based on potassium permanganate.

(% Cee-Bee<sup>®</sup> J-88L based on alkalinity - % Cee-Bee<sup>®</sup> J-88L based on permanganate) X 0.6 = lbs. Cee-Bee<sup>®</sup> J-88 Additive P required for 100 gals. of tank solution.

(% Cee-Bee<sup>®</sup> J-88L based on alkalinity - % Cee-Bee<sup>®</sup> J-88L based on permanganate) X 0.116 = gals. Cee-Bee<sup>®</sup> J-88 Additive PL required for 100 gals. of tank solution.

- Maintain alkalinity and permanganate concentration at 65-100%

## Solution Control (Continued)

### Metric Calculations

(no of mls 0.1N sodium oxalate) - (no of mls of 0.1N potassium permanganate) x (8.43) = (gms/ltr of Cee-Bee<sup>®</sup> J-88 based on permanganate)

(gms/ltr Cee-Bee<sup>®</sup> J-88 based on alkalinity) - (gms/ltr Cee-Bee<sup>®</sup> J-88 by volume, based on permanganate) x (0.3) = gms of Cee-Bee<sup>®</sup> J-88 Additive P required per ltr of tank solution.

gms of Cee-Bee<sup>®</sup> J-88 Additive P required per ltr of tank solution. x 2.23 = gms of Cee-Bee<sup>®</sup> J-88 Additive PL required per ltr of tank solution.

- Maintain alkalinity and permanganate concentration at 65-100%

## Safety, Handling, and Precautions

- **WARNING! Can cause severe burning.** Contains caustic. Corrosive!
- Do not allow any contact with eyes, skin or clothing. Can cause severe burns! Do not take internally. Do not breathe any fumes, mist or vapor. Use adequate ventilation. Wash thoroughly after handling. Wear OSHA-approved protective gear including oxidizer/caustic resistant gloves, boots, full face shield, or proper OSHA-approved respirator fitted with the proper filter cartridge. Wear proper protective clothing sufficient to prevent any skin contact.
- **SOME FORM OF PROPER EYE PROTECTION IS CRITICAL AT ALL TIMES. AVOID SPLASHING NEARBY PERSONNEL DURING SPRAY RINSE.**
- In case of accidental contact with eyes, flush with water for at least 15 minutes. Obtain prompt medical attention!
- For skin contact, flush with water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- For inhalation, remove to fresh air. Get medical attention.
- For ingestion, do not induce vomiting. Administer large quantities of water and immediately obtain medical attention.
- Wash clothing before reuse.

## Contact Us

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