

CEE-BEE® J-3



DESCALER FOR ENGINE OVERHAUL

CEE-BEE® J-3 is a mildly acidic liquid descaler, used in overhaul applications for hot sections of turbine engines.

BENEFITS

- Rapidly removes scale
- Exceptional bath life

PHYSICAL PROPERTIES

Appearance	Liquid	Solubility	Water soluble	Flammability	Non-flammable
Colour	Straw coloured	pH	4-5	Density	1.235 g/ml
Odor	Odourless	Flash Point	N/A		

AVAILABLE FORMATS



20L

20CB0J3P

208L

20CB0J3D

1000L

20CB0J3T

APPROBATIONS

- AMS 1382A
- ARP 1755B
- CFM CP2669
- GENERAL ELECTRIC CO4-239
- INTERNATIONAL AERO ENGINES OMAT 01-426
- PRATT & WHITNEY SPMC 8 (SPOP 211 AND SPOP 213)
- ROLLS ROYCE OMAT 1/152A
- SNECMA

LEGISLATION

- WHMIS Regulated

SAFETY & HANDLING

- Refer to Safety Data Sheet (SDS) for additional information
- Dispose of container and its contents in compliance with all applicable regulations.
- Avoid breathing mists from the product. Do not ingest product. Protective clothing, including gloves, visor or goggles waterproof must be worn when using the product. • Do not use in confined spaces. Use with adequate ventilation. In case of contact with eyes or skin, rinse with plenty of water for at least 15 minutes. Get medical help immediately. • If inhaled, seek fresh air. If swallowed, get medical help immediately.

Information and recommendations regarding this product are presented in good faith. However no guarantees are associated with the data presented in this document, and no such guarantees should be interpreted from the information and expected results presented. We do not assume any liability for damage, loss or injury, direct or indirect, related to the use of this product.

USE PROCEDURES

EQUIPEMENT: Use 316 stainless steel tanks and heaters to contain and operate CEE-BEE® J-3 bath solutions. For optimal bath performance, mechanical agitation is recommended. To prepare bath solution, dilute CEE-BEE® J-3 with water, by slowly adding CEE-BEE® J-3 to water, while agitating tank solution; to a volume concentration of 15–20 %. Adjust bath's pH to 3.0–3.5 with nitric acid.

APPLICATION:

CEE-BEE® J-3 Descaler bath is usually used in conjunction with the alkaline rust and scale removers, and conditioners: CEE-BEE® J-84A/J84AL and CEE-BEE® J-88/J-88L. The following procedure is used for overhaul of hot turbine sections:

1. Degrease parts in CEE-BEE® A-7X7 or SUPER BEE™ 300LF.
2. Process parts in an alkaline rust remover bath for 15 to 30 minutes.
3. Rinse by immersing in an air agitated, overflowing clear water bath.
4. Immerse parts in CEE-BEE® J-3 bath for 15–30 minutes, at 79–85 °C (175–185 °F).
5. Rinse by immersing in an air agitated, overflowing clear water bath.
6. Immerse parts in a CEE-BEE® J-88 bath for 15–30 minutes, at 85–95 °C (185–200 °F).
7. Immerse parts in an air agitated, overflowing clear water bath.
8. Immerse parts in CEE-BEE® J-3 bath for 15–30 minutes, at 79–85 °C (175–185 °F).
9. Immerse parts in an air agitated, overflowing clear water bath.
10. Force dry with hot air, or apply rust inhibitor CEE-BEE® Nortex 3025 to protect parts from flash rusting.

Note: Once immersion is complete, remove and suspend parts above tank, while allowing dragged out bath solution to drain back into tank; rinse suspended parts with a light mist of water over the processing tank. Minimizing solution drag outs should be done to avoid volume losses and contamination of rinse tanks.

SOLUTION CONTROL

CONTROL

Maintain J-3 bath solution's pH between 3.0–3.5, with periodic additions of nitric acid. Follow all safety precautions when handling nitric acid. Daily additions of water are required to compensate for bath's volume loss due to evaporation. Routine additions of undiluted CEE-BEE® J-3 are required to compensate for bath volume dragged (loss) out of bath. Solutions to be analyzed should be sampled from the centre of an operating bath.

REAGENTS

1. Ammonium oxalate (3.0 % solution): Dissolve approximately 30 g of calcium free ammonium oxalate into 1 litre of water.
 2. 0.5 N calcium chloride standard solution; prepare using following procedures: Dissolve 50.05 g of primary standard, calcium carbonate into 300 mL of distilled water, by slowly adding 140 mL of concentrated hydrochloric acid, to completely dissolve the carbonate. Within a fume hood, heat solution to boiling, to remove carbon dioxide and completely dissolve the sample. Cool to room temperature. Then neutralize excess acid with ammonium hydroxide, until pH paper indicates slightly alkaline, to litmus. Dilute the neutralized solution to exactly one litre.
- Optional: The normality of the calcium chloride solution can be tested following the procedure in the appendix.
3. Concentrated, reagent grade, ammonium hydroxide.

EQUIPMENT

- Distilled or deionized (DI) water.
- Beakers: 150, 250, or 600 mL.
- High intensity lamp.
- 25 mL pipette.
- Coarse filter paper.
- 10 mL graduated pipette.
- pH meter.
- 5 mL pipette.

PROCEDURE

1. Pipette a J-3 bath sample into a clean beaker. See chart below for amounts to pipette and beaker size to use. Typically, the cleaner the bath, the more sample you should use. The smaller the sample size, the greater the margin of error. A good compromise (to avoid using large quantities of concentrated ammonium hydroxide) is 50 or 25 mL.
2. Pipette an accurate volume of 3.0 % ammonium oxalate to beaker's solution (see chart for recommended volume).
3. Back light the sample using a high intensity light. Add ammonium hydroxide to raise the pH of the solution to at least 11.5 and until the solution becomes translucent. Use a calibrated pH meter to monitor the solution's pH.
4. Titrate the sample with calcium chloride, dispensed with a graduated pipette, until the solution sustains permanent turbidity (turbidity must remain for at least 30 seconds).

Note: A video demonstration of this procedure can be found on the McGean website (www.mcgean.com); select the CEE-BEE® Aviation tab, and Video Library link.

Sample Size Matrix

Sample Size Beakers, Ammonium Oxalate Addition Factors:

100 mL 600 mL 10.0 mL; 0.65
 50 mL 250 mL 5.0 mL; 1.30
 25 mL 150 mL 2.5 mL; 2.60
 20 mL 100 mL 2.0 mL; 3.25

CALCULATIONS

mL calcium chloride solution x factor = CEE-BEE® J-3 concentration expressed as volume %. Note: Factor will be determined by the size of your sample.