



Carbon Colloid

Carbon Colloid Process

Code No.: REM 3310

DESCRIPTION: **Carbon Colloid** is a slightly alkaline carbon-based suspension designed to provide a continuous carbon film on dielectric surfaces of printed wiring boards. It is used in preparation for through hole plating with the **Carbon Colloid Process**.

PHYSICAL & CHEMICAL PROPERTIES:

	<u>Carbon Colloid</u>	<u>Carbon Colloid Replenisher</u>
Appearance:	Black Liquid	Viscous, black liquid
Odor:	Odorless	Odorless
Freezing Temperature:	0°C	0°C
Min. Storage Temperature:	5°C	5°C

EQUIPMENT:

Modules: Horizontal Conveyorized Equipment
Polypropylene, PVC, 316 SS Construction

Ventilation: Not required

Heaters: N/A

Filtration: Not required

Please contact your REM Representative for an approved horizontal conveyorized equipment vendor.

MAKE-UP PROCEDURE:

Carbon Colloid: 100 % by volume

Important: Before transferring the Carbon Colloid to the sump, it must be re- circulated in the drum with a clean, dedicated electric drum pump.

**OPERATING
CONDITIONS:**

	<u>Optimum</u>	<u>Range</u>
Temperature	--	32-35°C
% Solids	3.00%	2.80-3.20%
pH	10.0	9.7-10.3

**BATH
MAINTENANCE &
REPLENISHMENT:****I. Percent Solids Analysis**

Approximately five grams of the bath is weighed to the nearest 0.1 mg in an aluminum dish. The sample is placed under an infrared lamp and allowed to evaporate for 30 minutes. It is then transferred to an analytical balance and the final gross weight is recorded after 60 seconds.

A. Equipment

Infrared heat lamp 250 W, 120 V (with loop filament)

Analytical balance

Forceps

Stop watch

Aluminum weighing dishes: Fisher Cat #08-732, VWR Cat #25433-008

B. Procedure

1. Weigh the aluminum dish to the nearest 0.1 mg (A).
2. Place 5.0 mL (approx. 5 g) of the Carbon Colloid in the aluminum weighing dish. Record the gross weight (B).
3. Place the sample under the infrared lamp. Lamp height from the sample should be 3 inches (75 mm).
4. Turn on the lamp and allow to evaporate for 30 minutes.
5. a) Simultaneously remove the sample from under the lamp with the forceps and start the timer.
 - b) Place the dish on a clean, dry surface to cool. The aluminum dish will cool to room temperature in approximately 25 seconds.
 - c) Place the cooled dish on the balance and record the weight (C) at exactly 60 seconds from when the dish was removed from the lamp.

C. Calculation

$$\frac{C-A}{B-A} \times 100 = \text{Percent solids of the Carbon Colloid bath B-A}$$



D. Replenishment

Carbon Colloid should be replenished with **Carbon Colloid Replenisher** according to the calculation below.

$(3.00 - \text{actual percent solids}) \times (\text{size of Starter bath in gallons}) \times 315$
= mL of Carbon Colloid Replenisher.

II. pH Analysis

Calibrate a pH meter with pH 7.00 and 10.00 buffer solutions. Measure the pH of the Carbon Colloid bath.

Under normal conditions, the Carbon Colloid bath will not require pH adjustment. Through normal replenishment, the Carbon Colloid bath will maintain a pH from 9.7-10.3.

Note: **If pH drops to 9.7, begin adding REM 3311 Carbon Colloid Replenisher HPH in place of Carbon Colloid Replenisher REM 3312.**

III. Particle size

Periodically a sample of the Carbon Colloid working solution should be analyzed for particle size and stability. If particle size is growing larger, and the stability index is low, a 0.1% addition by volume of Carbon Colloid Stabilizer REM 3121 should be added.

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**SAFETY &
WARNING:**

REM recommends that the operator read and review the REM Material Safety Data Sheets for the appropriate health and safety warnings before use.

Material Safety Data Sheets are available from REM company.

**WASTE
TREATMENT:**

Prior to using any recommendations for waste treatment, the user is required to know the appropriate local/state regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state regulations take precedent.

**ORDER
INFORMATION:**

<u>Product Name</u>	<u>Product Code</u>	<u>Container</u>
Carbon Colloid	REM 3310	5 gal (20 liters)
Carbon Colloid Replenisher	REM 3312	5 gal (20 liters)
Carbon Colloid Replenisher HPH	REM 3311	5 gal (20 liters)
Carbon Colloid Stabilizer	REM 3121	1 gal (5 liters)

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