



SUBJECT: CONDUCTIVE COATING
 Process Specifications

SUPERSEDES Aug. 28, 1953

This specification applies to the process of applying the external conductive coating to cathode ray glass tube types.

SCHEDULE NO. 1

MAY 1955

1. EQUIPMENT
 - a. Spray booth connected to a blower of sufficient capacity to remove any odors, fumes, or vapors resulting from the spraying operation.
 - b. Eclipse Junior Model 46 spray gun with #60 fluid tip and A-1 nozzle or equivalent.
 - c. 5 gallon capacity pressure spray tanks with built in air driven agitator.
 - d. Necessary air transformer, air hose and other connections.
 - e. Masking jigs and fixtures.
2. MATERIALS: * C276A - (For Lancaster) - External Conductive Coating
 C276B - (For Marion)
 T41 - Toluene
 A55 - Acetone
3. PROCEDURE:
 - a. Clean all masking jigs and fixtures thoroughly with toluene before beginning to spray. The various tube types are to be masked in accordance with the instructions given under the construction data in the 3-1K section.
 - b. Clean the tube surfaces to be coated thoroughly with a clean rag and acetone to remove all dirt and grease.
 - c. Make sure the pressure tank, fluid lines and spray gun are clean before adding the conductive coating.
 - d. Adjust the air pressure at the gun to 30-40 lbs. The gun should then be adjusted to give an oval pattern with the major axis vertical and a wet spray when the gun is held 6-8 inches from the tube.
 - e. After masking the tube start the tube rotating and spray. After spraying, the coating must have a wet sheen otherwise full strength will not develop.
 - f. Allow 5 minutes drying time before packing or equivalent. Inspect and recoat any damaged tubes.

NOTE: *C276B conductive coating must be kept agitated continuously.

** End of Schedule #1.

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

* CHANGE
 ** ADDITION
 *** DELETION

15-543-12-61 PCL23687-133AS
 These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission. 13D26—R1



SUBJECT: APPLICATION OF CONDUCTIVE COATING
 AND INSULATING COATING MATERIAL

SUPERSEDED DATE Aug. 13, 1953

This specification applies to the process of applying an external insulating and internal conductive coating to kinescopes and oscilloscopes.

SCHEDULE NO. 2

1. EQUIPMENT:
- a. Spray booth connected to a blower of sufficient capacity to remove any odors, fumes, or vapors resulting from the spraying operation.
 - b. Eclipse Junior Model 46 spray gun with #60 fluid tip and A-1 nozzle or equivalent.
 - c. 5 gallon capacity pressure spray tanks with built in air driven agitators.
 - d. Necessary air transformers, air and fluid hoses and connections.
 - e. Masking jigs and fixtures.

2. MATERIAL:
- C276 - External Conductive Coating
 - L253 - External Insulating Coating
 - A55 - Acetone
 - T41 - Toluene

3. PROCEDURE:

Note: The 2F21 requires insulating coating only.

- a. Clean the pressure tanks, fluid hose and spray guns thoroughly before filling with the respective coatings. Use toluene to clean that equipment used for C276 coating and acetone for the rest.
- b. Clean the tube surfaces to be coated thoroughly with a clean rag and acetone to remove all dirt and grease.
- c. Clean all masking jigs and fixtures before use. The various tube types are to be masked in accordance with the instructions given under the construction data in the 3-1K section.
- d. Apply the conductive coating first. Adjust the air pressure at the gun to 30-40 lbs. The gun should then be adjusted to give an oval pattern with the major axis vertical and a wet spray when the gun is held 6-8 inches from the tube.
- e. Mask the tube for spraying of the conductive coating and rotate. While tube is rotating spray evenly over the surface to be coated, taking care that a good wet coat is put on and yet that no runs or sags develop. Immediately after spraying, the entire coating must have a wet sheen otherwise dry spots are present and the coating will not develop full conductivity or strength.
- f. Allow the tube to air dry for 5 minutes. Inspect the coating for scratches or bare spots and if present recoat. If not remask the tube for application of the insulating coating.
- g. If same tank and spray gun is used for insulating coating as for the conductive, clean the tank, fluid hose, and gun thoroughly with toluene before filling with insulating coating.
- h. Adjust the air pressure at the gun for 25-35 lbs. The gun should be set to give slightly wet spray when held 6-8 inches from the tube.

* Correction

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

10-539-15-67

KW-1331G

* CHANGE
 ** ADDITION
 *** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.

13D26



RADIO CORPORATION OF AMERICA
RCA VICTOR DIVISION

TUBE DEPT. STANDARDIZING KS-2x-Kcps
HARRISON, N. J. LANCASTER, PA.

DATE Aug. 13, 1953 PAGE 2a

STANDARDIZING
NOTICE 34-17-62

SUPERSEDED DATE

SUBJECT: APPLICATION OF CONDUCTIVE COATING
AND INSULATING COATING MATERIAL

3. PROCEDURE: (Cont'd)

- i. While tube is rotating, spray the insulating coating on the specified area. The coating should have a wet sheen and be opaque.
- j. Allow the tube to air dry for 5 minutes before packing or equivalent. If coating is damaged recoat.

Note: C276 conductive coating must be kept continuously agitated.

ENGINEERING SECTION
STANDARDIZING

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

2-538-11-61

PCL21598-1331G

* CHANGE
** ADDITION
*** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.

13D26



SUBJECT: APPLICATION OF INSULATING AND CONDUCTIVE COATING

SUPERSEDED DATE Oct. 13, 1953

This specification applies to the process of applying the external insulating and decorative coating to kinescopes.

SCHEDULE NO. 4

1. EQUIPMENT:
- a. Spray booth connected to a blower of sufficient capacity to remove any odors, fumes, or vapors resulting from the spraying operation.
 - b. Eclipse Junior Model 46 spray gun with #60 fluid tip and A-1 nozzle or equivalent and Type CV or EGA DeVilbiss spray gun.
 - c. 5 gallon capacity pressure spray tanks with built in air driven agitator.
 - d. Necessary air transformer, hose and other connections.
 - e. Masking jigs and fixtures.

2. MATERIALS:
- S267A *** - Silicone Coating
 - L608 or L253A - Decorative Coating
 - A55 - Acetone
 - T41 - Toluene

3. PROCEDURE:
- a. Clean the pressure tank, fluid hoses, and spray guns well before use. Use toluene to clean the tank, hoses and gun used for spraying the silicone coating, and acetone for those used for decorative coating.
 - b. Adjust the air pressure at the gun to 25-35 lbs. for the decorative paint. 20-30 lbs. for the silicone. Adjust the gun to give an oval pattern with the major axis vertical and a slightly wet spray when holding gun 4-6 inches from tube.
 - c. Clean the tube. Remove any loose scale with a wire brush and dirt and grease with a clean rag and acetone. Make sure the glass cone in particular is clean.
 - d. Coat the glass cone first with S267A *** silicone coating. While tube is rotating spray the silicone lightly from the reference line to the glass cone metal cone seal. The coating may tend to form a few droplets on the glass. This will not effect the coating.
 - e. Mask the neck and glass funnel off at the seal area. Make sure that mask completely covers the glass cone as any overspray will adversely effect the insulating properties of the coating.
 - f. Rotate tube again and spray decorative paint from the glass cone metal cone seal down to and including the rim.
 - g. Allow the tube to air dry for a minimum of 5 minutes or equivalent forced drying.
 - h. Inspect the coating for any damage and recoat any that have been scratched or marred.

End of Schedule #4

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

12-5311-6-63

PCL22235-133JR

* CHANGE
 ** ADDITION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced



SUBJECT: AND INSULATING COATING MATERIAL

SUPERSEDED DATE

This specification applies to the application of insulating lacquer L253A and silicone ~~insulation~~ resin S267A to metal shells of kinescopes.

SCHEDULE NO. 8

- (Initially for all metal kinescopes)
1. EQUIPMENT: As specified under Schedule No. 1
 2. MATERIALS:

L253A	Lacquer
S267A	Silicone Resin
A55	Acetone
 3. PROCEDURE:
 - a. Spray tank (if used) for insulating paint to be thoroughly cleaned with clean acetone and clean rags before adding insulating paint.
 - b. Hose of spray gun (when using tank) to be thoroughly cleaned.
 - c. DeVilbiss CV type gun to be taken apart and fluid needle (No. G), fluid tip (No. G), and air cap (No. 904) to be thoroughly cleaned with clean acetone and a clean rag each day before spraying.
 - d. Adjust air pressure at gun to 25 lbs.
 - e. Adjust gun to give an oval pattern with the major axis vertical, i.e., setting of 18.
 - f. Clean masking jigs before spraying. Soak jigs in acetone and clean after spraying 3 tubes.
 - g. Open gun 1-1/4 turns to give a slightly wet spray when holding gun approximately 4-1/2" from tube.

NOTE: Settings may vary slightly with different guns.

- h. Mask neck and glass cone of tube. While tube is rotating spray L253A lacquer from glass cone metal cone seal to faceplate rim.
- i. Remove mask from glass cone. There should not be any overspray of L253A lacquer on glass. Any there should be removed with a cloth moistened with acetone.
- j. Rotate tube and spray S267A on the glass cone from the reference line to glass cone metal cone seal. The coating may tend to form droplets in places. This will not effect the coating.
- k. Handle bulbs carefully so that paint is not removed or scratched during air drying.
- l. Inspect bulbs - scratched or damaged coatings to be cause for rejection. Reclean and recoat the rejected tube.
- m. Air dry tubes for 5 min. minimum.
- n. Clean face and rim of paint with clean cloth moistened with acetone.

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

5-535-11-64 EP-126JD

* CHANGE
 ** ADDITION
 *** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.

13D26



SUBJECT: APPLICATION OF CONDUCTIVE COATING
 AND INSULATING COATING MATERIAL

The process involves the application of a thin layer of silicone on the outside surface of the glass bulb. The silicone is to be applied on the area around the cavity contact. This is done after main sealing while the bulb is on the conveyor between Main Seal and Exhaust. The coating is baked on in the straight line exhaust machine.

SCHEDULE NO. 10

(Initially for 17LP4 at Marion)

1. EQUIPMENT:
 - a. One wide mouth glass jar for each application position.
 - b. One 3-1/2" wide soft bristle paint brush for each application position.
 - c. Five gallon safety can for storage of resin material.
2. MATERIALS:
 - R251A Silicone coating
 - Silicone, SR98, diluted with 1-1/2 times its volume of toluene (T608) may be used as an alternate coating. 1670 cc of either silicone preparation is required for 1000 tubes.
3. PROCEDURE:
 - a. Apply insulating coating.
 1. Dip brush in silicone and press out excess to prevent running.
 2. Wipe off any visible contamination on the glass bulb.
 3. Apply the silicone to the bulb so as to cover a 6" diameter area around the cavity contact.
 4. The coating must be baked on at a temperature of 350°C or more. The silicone coating must not be touched before this bakeout occurs.
 - b. Precaution
 1. Peeling of the silicone may occur if the surface is dirty or the silicone is applied in too concentrated a solution. If peeling seems due to the latter cause because of evaporation of solvent from the silicone containers additional toluene may be added up to one-half the volume of liquid in the container.
 2. Do not mix resin with toluene in factory.

ENGINEERING SECTION
 STANDARDIZING

SCALE—

DIMENSIONS IN UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

3-538-7-61

PCL21573-133LG

* CHANGE
 ** ADDITION
 *** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.



SUBJECT:

APPLICATION OF CONDUCTIVE AND
INSULATING COATING
Process Specification

SUPERSEDES Aug. 3, 1953, Formerly Recalled

SCHEDULE No. 11

(Initially for 7C24)

1. EQUIPMENT
 - a. One 2-gal. crock for mixing paint on rolling mill.
 - b. One 2-gal. crock for dipping tube in paint.
 - c. Rack capable of holding 4 tubes and allowing dripping after dipping.
 - d. Small paint brush.

2. MATERIALS
 - A600 Ammonium Chloride
 - A67 Chromic Acid (Tech.)
 - A613 Aluminum Masking Compound
 - L619 Silver Paint



CHROMIC ACID HANDLING PRECAUTIONS: See S.N. 33-2-7B.
TRICHLORETHYLENE SAFETY PRECAUTIONS: See S.N. 33-2-11C.

3. PROCEDURE

- a. Separate leads.
- b. Remove grease by scrubbing tube in Trichlorethylene.
- c. Dip tube in ammonium chloride until all oxides are removed.
- d. Wash thoroughly in tap water. Blow dry.
- e. Dip leads in chromic acid for 30 seconds.
- f. Wash in tap water. Blow dry.
- g. Remove all excess solder.
- h. Paint masking compound on all glass parts covering thoroughly.
- i. Roll silver paint on rolling mill before dipping for at least 2 hours.
- j. Fasten tube in tube holder.
- k. Dip tube and holder in paint for about 20 seconds making sure tube is completely submerged in paint and no air pockets are formed when tube is submerged.
- l. Hang tube in tube holder on dripping rack.
- m. After 5 minutes remove drops of paint from bottom of radiator and edge of grid flange by touching paint drop with tip of finger.
- n. After tube has been on rack for 10 minutes, remove and place on clean tissue paper.
- o. Air dry tube for at least 16 hours, or oven dry at 150°C. for 15 minutes.
- p. Remove all masking and clean all glass with Bon Ami.
- q. Touch up paint with small brush.

SCALE—

End of Schedule #11

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

11-543-29-63

802EB

* CHANGE
** ADDITION
*** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.

12702 01



SUBJECT: APPLICATION OF CONDUCTIVE AND
 INSULATING COATING

SUPERSEDED DATE

Formerly 34-17-68

SCHEDULE NO. 12

This process covers the application of Conductive Lacquer to Tube Type 8D21.

1. EQUIPMENT:
 - a. DeVilbiss spray gun (or equivalent) with No. G fluid tip and fluid needle.
 - b. Rubber tubing.
2. MATERIALS:
 - T251 Trichlorethylene
 - A55 Acetone
 - L618 Silver Conductive Lacquer
 - Emery Paper, fine grit or steel wool.
 - Masking tape or stripping compound.



TRICHLORETHYLENE SAFETY PRECAUTIONS: See 33-2-11C

3. PROCEDURE

- a. From the external metal surfaces of the completely constructed tube, remove oxide scale and loose plating by means of fine-grit emery paper or steel wool. All rust should be removed, but tightly adherent oxide may be left on metal surfaces. Remove all asbestos, lint, and steel particles.
CAUTION: Extreme care should be taken to insure that glass surfaces are not scratched. Also, no grit or steel wool shall be allowed to enter any water pipes.
- b. Degrease tubes thoroughly using acetone or trichlorethylene. **Hot** trichlorethylene is necessary for removal of Apiezon grease. Wipe all surfaces with a clean cloth moistened with acetone in order to completely remove loosened oxides and scale.
- c. Mask all glass surfaces with masking tape, stripping compound, or by any other suitable method.
- d. Mask one-half inch at the end of all water connections as well as the flat terminal connector. Rubber tubing is satisfactory as a mask for the water connections.
- e. Coat tube with lacquer by spraying.
 1. Spray gun pressure: 23-27 psi.
 2. Distance of gun from work: 4 in.
 3. Adjust fluid needle of spray gun so that only a light coverage results. This is necessary because too heavy a spray will result in considerable flow and sagging of the lacquer due to complexity of the header structure.

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

15-537-14-60

PCL21585-126LG

* CHANGE
 ** ADDITION
 *** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.

13D26



SUBJECT:

APPLICATION OF CONDUCTIVE AND
INSULATING COATING

SUPERSEDED DATE

3. PROCEDURE (Cont'd)

4. Spray coat the header first, set it aside to dry for 10 minutes, then finish spraying the tube.

Note: If "stringiness" or "cob webbing" results during spraying, the addition of more thinner is indicated.

5. The lacquer should be allowed to dry for at least 16 hours before packaging for shipment. The finish can be forced dried by baking 10-15 minutes at 150°C. (302°F.) This final drying can be done with the tube resting on the header flange.

ENGINEERING SECTION
STANDARDIZING

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

19-537-14-60

PCL21580-126LG

* CHANGE
** ADDITION
*** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.



This specification applies to the process of applying the external conductive and insulating coatings to cathode-ray glass tube types.

SCHEDULE No. 13

(Initially for Tube Type C73599)

1. EQUIPMENT:
 - a. Spray booth connected to a blower of sufficient capacity to remove any odors, fumes, or vapors resulting from the spraying operation.
 - b. Two Eclipse Junior Model 46 spray guns with #60 fluid tip and A-1 nozzle or equivalent.
 - c. A 5 gallon and a 2 gallon capacity pressure spray tank with built-in air-driven agitators.
 - d. Necessary air transformers, air hoses, and other connections.
 - e. Masking jigs and fixtures.
2. MATERIALS:

C276A	External Conductive Coating
T41	Toluene
A55	Acetone
S267A	Insulating Coating
3. PROCEDURE:
 - a. Clean all masking jigs and fixtures thoroughly with SOLVENT before beginning to spray.
 - b. Clean the tube surface to be coated thoroughly with clean CLOTH and acetone.
 - c. Mask tube.
 - d. Make sure the pressure tanks, fluid lines and spray guns are clean before adding the coatings.
 - e. Adjust the air pressure at the gun to 30-40 pounds. The gun should be adjusted to give an oval pattern with the major axis vertical and a wet spray when the gun is held 6-8 inches from the tube.
 - f. After masking the tube, start the tube rotating and spray on conductive coating. After spraying the tube must have a wet sheen, otherwise full strength will not develop.
 - * g. Remove all masking jigs and check for overspray. Any present should be removed with a cloth dipped in toluene.
 - h. Start the tube rotating again and spray with insulating coating, allowing approximately a 1-2 inch overlap on to the conductive coating. Coating should appear wet and shiny immediately after spraying.
 - i. Allow minimum of 30 minutes, but preferably 45 minutes drying time before packing.
 - j. Inspect conductive and insulating coating and re-coat any damaged tubes.

NOTE: * C276A Conductive coating must be kept agitated continuously.

SCALE—

DIMENSIONS IN

End of Schedule No. 13

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

13-544-30-63

PCL24065-126EB

* CHANGE
** ADDITION
*** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.



SUBJECT: APPLICATION OF INSULATING AND CONDUCTIVE COATING 2c-X4X11

SUPERSEDES

This specification applies to the process of applying the external insulating and decorative coating to kinescopes.

SCHEDULE NO. 14

(Initially for Color Kinsecopes)

1. EQUIPMENT:
 - a. Spray booth connected to a blower of sufficient capacity to remove any odors, fumes, or vapors resulting from the spraying operation.
 - b. Eclipse Junior Model 46 spray gun with #60 fluid tip and A-1 nozzle or equivalent and Type CV or EGA DeVilbiss spray gun.
 - c. 5 gallon capacity pressure spray tanks with built in air driven agitator
 - d. Necessary air transformer, hose and other connections.
 - e. Masking jigs and fixtures.

2. MATERIALS:

S267A	- Silicone Coating
L608 or L253A	- Decorative Coating
A55	- Acetone
T41	- Toluene

3. Procedure:
 - a. Clean the pressure tank, fluid hoses, and spray guns well before use. Use toluene to clean the tank, hoses and gun used for spraying the silicone coating, and acetone for those used for decorative coating.
 - b. Adjust the air pressure at the gun to 25-35 lbs. for the decorative paint. 20-30 lbs. for the silicone. Adjust the gun to give an oval pattern with the major axis vertical and a slightly wet spray when holding gun 4-6 inches from tube.
 - c. Clean the tube. Remove any loose scale with a wire brush and dirt and grease with a clean rag and acetone. Make sure the glass cone in particular is clean.
 - d. Coat the glass cone first with S267A silicone coating. While tube is rotating spray the silicone lightly from the reference line to the glass cone metal cone seal. The coating may tend to form a few droplets on the glass. This will not effect the coating.
 - e. Mask the neck and glass funnel off at the seal area. Make sure that mask completely covers the glass cone as any overspray will adversely effect the insulating properties of the coating.
 - f. Rotate tube again and spray decorative paint from the glass cone metal cone seal to within 3/4" of the rim.
 - g. Allow the tube to air dry for a minimum of 5 minutes or equivalent forced drying.
 - h. Inspect the coating for any damage and recoat any that have been scratched or marred.

SCALE—

DIMENSIONS IN

End of Schedule No. 14.

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

15-4510-21-63

PCL25699-126EB

* CHANGE
 ** ADDITION
 *** DELETION

These drawings and specifications are the property of Radio Corp. of America, RCA Victor Div. and shall not be reproduced or copied or used as the basis for the manufacture or sale of apparatus and/or devices without permission.

13D26-R1