WESTINGHOUSE
ELECTRIC CORPORATION

TENTATIVE
FEB 1 1953
SPECIFICATION

Purchasing Department Specification 7336-L
(Not for publication)

INERTEEN

1. This specification covers nonflammable insulating liquid used in specific designs of transformers where the fire hazard of insulating oil is to be eliminated. It is designated as Inerteen 7336-9. The material is a mixture of 60 per cent chlorinated diphenyl, and 40 per cent trichlorbenzene, by weight, with 0.20 per cent phenoxypropene oxide added.
2. No change shall be made in the quality of successive shipments of material furnished under this specification without first obtaining the approval of the purchaser.

GENERAL PROPERTIES

3. CHEMICAL STABILITY: (3.1) There shall be no generation of free chlorides when a specimen is refluxed with distilled water for six hours in the presence of air.
(3.2) There shall be no generation of free chlorides when a specimen is heated with distilled water in a sealed glass bomb at 150 C (302 F) for six hours.
4. FIXED CHLORINE: The fixed chlorine content shall not be less than 59.10 per cent.
5. ANALYSIS OF PRODUCTS OF FRACTIONAL DISTILLATION: (5.1) When fractionally distilled, the distillate shall be separated into ten per cent boiling fractions. No fraction on analysis shall show less than one chlorine atom for each hydrogen atom present in the mixture. This shall be determined by chemical analysis.
(5.2) No fraction of the distillate so collected shall evolve more than 1.5 per cent total combustible gases on arcing (including carbon monoxide, hydrogen and volatile hydrocarbons) when tested in accordance with ASTM D901.
6. ELECTRICAL STABILITY: After heating for 96 hours at 100 C (212 F) in a closed container, the resistivity at 100 C (212 F) shall not be less than 100 x 10^9 ohms/cm3. The decrease in resistivity shall not be greater than ten per cent of the original value.
7. DIELECTRIC CONSTANT: The dielectric constant at 1000 cycles and 25 C (77 F) shall not be less than 4.0 nor more than 4.3; and at 1000 cycles and 100 C (212 F) shall not be less than 3.5 nor more than 3.8 when determined in accordance with ASTM D-924.

CHEMICAL AND PHYSICAL PROPERTIES AND TESTS

8. PHENOXYPROPENE OXIDE CONTENT: The Inerteen shall contain 0.18 to 0.22 per cent by weight of phenoxypropene oxide.
9. NEUTRALIZATION NUMBER: The neutralization number shall be less than 0.01 mg. of KOH when determined in accordance with ASTM D-974.
10. FREE CHLORIDES: The material shall not contain more than 0.10 ppm of free chlorides when determined in accordance with ASTM D-901.
11. CONDITION: The material shall be clear.
12. SPECIFIC GRAVITY: The specific gravity at 15.5 C/15 C (60 F/60 F) shall not be less than 1.560 nor more than 1.568 when determined in accordance with ASTM D-901.
13. VISCOSITY: The viscosity at 37.8 C (100 F) shall be 54 seconds, plus or minus 2 seconds, when determined by Saybolt Universal Viscosimeter in accordance with ASTM D-88.
14. COLOR: The color shall not be greater than 150 A.P.H. when tested in accordance with ASTM D-901.
15. FIRE POINT: The material shall have no fire point when tested according to ASTM D-92 to its boiling point.

DSW 550795

STLCOPCB4089212

16. POUR POINT: The pour point shall be lower than minus 32 C (-25.6 F) when determined in accordance with ASTM D-97.
17. DIELECTRIC STRENGTH: The dielectric strength at point of shipment shall not be less than 35,000 volts and not less than 30,000 volts at destination when tested in accordance with ASTM D-877.
18. ELECTRICAL RESISTIVITY: The electrical resistivity at 100 C (212 F) when tested at 500 volts D-c shall not be less than 100 x 10^9 ohms/cm^3.
19. CORROSION: After heating with the bright aluminum for six hours at 200-220 C (392-428 F), the aluminum shall not be corroded either on visual inspection or weight determination, and the Inerteen shall conform to the following:

Color, Max	400 A.P.H.
Acidity, Max.	0.01
Free Chlorides, ppm, Max	5.0
Condition	Clear

20. DISTILLATION RANGE: The first drop shall not distill at less than 200 C (392 F). The distillation below 270 C (518 F) shall not exceed 40 per cent. The 90 per cent point in the distillation shall be between 395 and 410 C (743 - 770 F).
21 REFRACTIVE INDEX: The refractive index at 25 C (77 F) shall not be less than 1.6137 nor more than 1.6157 when tested according to ASTM D-901.
22. TEST METHODS: The tests for fixed chlorine, electrical resistivity, electrical stability and phenoxypropene oxide shall be made in accordance with Westinghouse Electric Corporation Material Test Specification 80166, which shall be considered a part of this specification.

PACKING AND MARKING

23. PACKING: Shipping containers shall conform to the requirements of Westinghouse Electric Corporation Purchasing Department Specification 6824-2.
24. MARKING: (24.1) Containers other than tank cars shall be marked in accordance with the requirements of Westinghouse Electric Corporation Purchasing Department Specification 6824-2.

(24.2) Each tank car shall have a packing slip bearing the following information: Purchase Order Number; P D Spec 7336-9-L; Batch Number; Number of Gallons; Name of Manufacturer.

INSPECTION

25. INSPECTION: The manufacturer shall furnish the Purchasing Agent of the Westinghouse Electric Corporation a test report of the tests made in accordance with Sections 8 to 21 inclusive of this specification on each shipment of Inerteen.
26. SAMPLES: (26.1) For Inerteen shipped to any Westinghouse plant except Sharon, Pennsylvania, the manufacturer shall furnish a one quart sample from each shipment to the purchaser by parcel post.

(26.2) For shipment of Inerteen to the Sharon, Pennsylvania Works in lieu of samples the manufacturer shall furnish a certified test report of the tests made in accordance with Sections 8 to 21 inclusive of this specification on each tank car or shipment of drums.

DSW 550796

STLCOPCB4089213