ELECTRICAL FLUIDS PROGRAM

I. Environmental Pollution Studies

   1) Analytical research

   2) Animal feeding studies

   3) Waste stream analysis

   4) Environmental sample analysis

   5) Biodegradability studies

II. Establish what compounds and levels are acceptable

   1) Among ourselves

   2) With customers

   3) With government

III. Develop waste recovery methods

   1) Adsorption

   2) Solvent extraction

IV. Develop waste disposal methods

   1) Incineration

   2) Dehalogenation by hydrogenation

   3) Complete reclaim in our plants

V. Clean up our own operations

VI. Encourage our customers to clean up their operations

VII. Determine which fluids are acceptable on the basis of studies under I.

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VIII. Select or modify current fluids to make them acceptable

1) Fractionate Aroclor 1242 to remove tetra and higher homologs

IX. Purify and evaluate new fluids

1) Tolyl xylyl sulfone

2) 2,4' dichlorobiphenyl

3) 2,2' dichlorodiphenyl ether

4) Silicate esters

a) Aliphatic OS-59

b) Mixed

c) Aromatic TAS 190

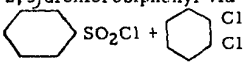
5) HB-40

6) Isopropyl biphenyl

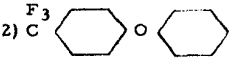
7) Cyclohexyl benzene

X. Synthesize new fluids

1) 3,4 / 2,3 dichlorobiphenyl via



2)



3) Explore use of blocking groups to prevent or reduce ionization

XI. Find out the status of

a) Negotiations with {General Electric / British Cellophane} regarding resale of their polypropylene film for capacitor use

b) Negotiations with respect to Imperial Smelting - Flutic Fluids

XII. Acquisitions related to the Electrical Fluids business - Doble Engineerin Hilton Engineering, etc.

XIII. Joint venture with capacitor or transformer manufacturers to secure better access to technology in these industries to supplement and aid our chemical expertise

XIV. Find stabilizer for Aroclor 1242

1) Select compound

2) Learn how to purify it

3) Learn its stability

4) Determine its efficiency as a scavenger

XV. Evaluate durfactants to see if they will permit satisfactory impregnation of all film capacitors

XVI. Provide a fluid suitable for use in metallized film or paper capacitors

XVII. Insure that capacitor fluids are compatible solubility wise and electrically with polypropylene film

XVIII. Provide G.E. with an acceptable substitute for 80% Aroclor 124, 20% TTCB

XIX. Define a transformer insulation system which will permit design of a 125° C transformer. See if the insulation from this program might have application in dry type transformers.

XX. Determine the impulse ratio of Aroclor 1242 and provide means for overcoming its low impuse ratio if that is confirmed.

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