MONSANTO CHEMICAL COMPANY

ANNISTON, ALABAMA

SUBJECT : Coefficient of Expansion of Aroclors.

METHOD : Calculation from Specific Gravity Data.

COEFFICIENT OF EXPANSION IN AROCLORS

Average coefficient of expansion between two given temperatures is calculated from specific gravities as determined by experiment at these temperatures.

Example for Aroclor 1254

Average Coefficient of expansion over range from 25°C to 65°C

Sp.Gr. at 65/65°C = 1.5315 (Determined)

Sp.Gr. at 65/25°C = 1.5062 = x (Calculated from above)

Sp.Gr. at 25/25°C = 1.5460 = y (Determined)

Formula:—

$$\frac{y - x}{x\ (65 - 25)} = .0006606 \text{ cc/cc/°C}$$

The formula is derived from $\dfrac{\frac{1}{x} - \frac{1}{y}}{\frac{1}{y}\ (65 - 25)}$, which gives the change in volume per unit volume from 25°C to 65°C, divided by the number of degrees in the temperature range. It is not strickly accurate because the coefficient probably changes with change in temperature but may be considered an approximate average coefficient for the given range.

DSW 330523

STLCOPCB4077167

Messrs: Weatherly – 2 – St.Louis
Weaver
Jenkins
Clegorn
File:

October 26,1944

AROCLOR 4465

SHIPPED TO: Anaconda Wire and Cable Company DATE SHIPPED 10/26/44

CAR NO.: S.P. 31610

Lot No.	No.Drums	Soft.Point °C	Agitated Test,No.Days	Cryst.Test
640	1	58.0	5	Pass
645	20	57.6	5	"
646	21	59.4	5	"
647	16	59.2	5	"
649	25	58.5	5	"
653	24	60.7	5	"
654	23	58.7	5	"
655	20	58.6	5	"

F.A.Barker

DSW 330524

STLCOPCB4077168