

**O R G A N I C
C H E M I C A L S D I V I S I O N
R E S E A R C H**

Report

REPORT NO. 760-91-1630043

PROJECT NO. 760-91-1630043

FOR

MONITORING

(Temperature Control Fluid)

DATE - January 31, 1969

WRITTEN BY - J. D. Sullivan



ST. LOUIS, MO.

NEV 024991

PLAINTIFF'S
EXHIBIT

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The fluidity of the finished product has not been firmly established but reasonable ranges for viscosities and pour points are listed above. These ranges were determined by laboratory runs and pilot plant demonstrations.

The effects of higher boiling Aroclor isomers on the fluidity of the product increases as the temperature is reduced. However, low temperature viscosities (i.e. +20°F) have been very consistent with pour point determinations. Furthermore, low temperature viscosities are more accurate, more reproducible and more meaningful than absolute pour point determinations.

Pour points were determined in regular ASTM tubes suspended from a specially designed holder, which was mounted inside a frost free cold chest (Thermotron Corp.), equipped with accurate temperature controls. By means of an external rotating device, the tubes were rotated, through a 45° angle, from the vertical position to a horizontal position and the timing for the test was started. Flowing motions, on the surfaces of the constant temperature fluids, were observed through a frost-free sight glass. The lowest temperature, at which flow was observed within 5 seconds (ASTM), was designated as the pour point of the fluid.

TOXICITY AND HAZARDS

Aroclor is a liquid, under normal conditions, having a medium toxicity range for liquid ingestion and a high toxicity range for vapor inhalation. The maximum allowable concentration is 1 mg/cubic meter. This material can cause dermatitis, systemic poisoning from the fumes and yellow atrophy of the liver. There are skin, mucous membranes and eye irritation encountered in handling Aroclors. However, the crude Aroclor, used as the starting material in this process, is saturated with HCl. Hydrogen chloride is a gas and is very toxic. It is hazardous to teeth, skin, eyes and mucous membranes. Aroclors offer no fire hazard.

Aluminum chloride reacts with small amounts of water with such violence as to start a fire in the presence of organic materials. Containers of this material should be stored completely enclosed or under a dry inert atmosphere. It reacts with moisture in the skin or mucous membranes to form a strong acid which can result in severe burns. Avoid inhaling the dust and wash affected areas with large amounts of water. Wear rubber gloves and goggles when handling this material.

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Calcium hydroxide is not dangerously toxic but is very hazardous to the eyes. It will burn the skin and the dust will affect the mucous membranes. In general, Attapulugus earth is not toxic. Persons handling large amounts of this absorbent should wear a respirator to avoid inhalation of the dust which contains silica.

POLLUTION CONTROL

The following weights of waste materials will have to be disposed of from the various process steps in the production of MCS 717.

Pounds of Waste Materials per 100# MCS 717

<u>Process Steps</u>	<u>Pounds</u>
Isomerization & Degassing	0.01# HCl
Neutralization	None
Distillation	5# to 10# Residue
Attapulugus Earth Treatment	0.5# Attapulugus
	<u>1.0# Porocel</u>
Filter Cake	1.5#

Residual HCl contained in the original crude and the small amount of HCl, evolved during the isomerization, will be dissolved in a water scrubber and sewerred. The still residue, including chlorination tars, isomerization polymers, iron, aluminum and calcium salts along with highly chlorinated biphenyl, is transferred hot to a suitable container and sent to the toxic dump. The filter cake, from the Attapulugus Earth treatment, will go to the solid disposal interment.

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