INTRODUCTION

MCS 295 was developed as a fire resistant low temperature heat transfer fluid. Production quantities of this fluid are required for a tank car heating system at Vapor Corporation, Niles, Illinois. Five (5) drums of MCS 295 are scheduled for the first shipment and the initial order is estimated at 10,000 gallons.

SYNOPSIS OF PROCESS

MCS 295 is prepared by thoroughly mixing tri-tetrachlorobenzene with Aroclor 1242.

1242 lowers Spec + raises Visc
TTCB raises " " + lowers "

BILL OF MATERIALS

The process weights for 100 pounds of MCS 295 are as follows:

Aroclor 1242	80 pounds
Tri-tetrachlorobenzene	20 pounds

PROCESS IN DETAIL

To a clean, dry vessel, equipped with an agitator, charge 80 pounds of Aroclor 1242 and 20 pounds of tri-tetrachlorobenzene. Stir the blend for 30 minutes to insure complete mixing. The final fluid is filtered through a sock or a string wound filter into drums. A one pound sample of the product should be submitted for analysis.

MATERIAL SPECIFICATIONS

Raw materials used in this formulation are commercially available products. Aroclor 1242 (Monsanto Code #81101) and tri-tetrachlorobenzene (Monsanto Code #58500) must pass finished goods specifications.

The tentative specifications and methods of analyses for MCS 295 are as follows:

Tentative Specifications		Method	
		WGK	Anniston
Appearance:	Clear, nearly white oily liquid	10084	14-44-54
Viscosity, cs at 100°F at 210°F	8.90 to 9.10 report	10086	14-4-52
Fire Point:	none to boiling point	10123	14-28-54
Sp.Gr. 25/15.5C:	1.408 to 1.416	10114	14-49-54
Pour Point:	-15 max.	Equal JFQ 100-A	
Acidity (mg KOH/gm)	0.05 max.	10087	14-42-54
Moisture	75 ppm max.	10620	14-31-54

TOXICITY AND HAZARDS

The toxicity of MCS 295 is unknown at present and the formulation should be handled with normal care. Repeated or continuous skin contact should be avoided and inhalation of vapors at elevated temperatures should be prevented. Tri-tetrachlorobenzene is a flammable liquid and a moderate fire hazard. Fires resulting from this component can be extinguished with water (fog or spray) foam or carbon dioxide. Tri-tetrachlorobenzene is irritating to the respiratory system and eyes.

STREAM POLLUTION

No waste streams are discharged from this process.

J. D. Sullivan

jd

4/24/64

File Copy Approved by
Manager of Research
W. R. Richard

Date of Final Approval _____

PHYSICAL CONSTANTS DATA

SUBSTANCE	STRUCTURAL FORMULA
MCS 295	A Formulation
COMPILED BY: J. D. Sullivan	DATE: 4/24/84

NAME		SOURCE & DATE
Formula	A formulation	
Molecular Weight		
Appearance		
Boiling Point at 760 mm		
Boiling Point at mm		
Boiling Point at mm		
Boiling Point at mm		
Crystallizing Point		
Melting Point		
Solution Point		
Specific Gravity @ 25°/15.5°C	1.412	
Specific Gravity @		
Pounds per Gal. @ °C		
Coefficient of Expansion		
Refractive Index @ $n_D^{\ }$		
Infra Red Spectrum (Reference)		
Ultra Violet Spectrum (Reference)		
Viscosity @ 100 °F	9.00 cs.	
Viscosity @		
Surface Tension		
Solubility in Water		
Solubility in		
Solubility in		
Flash Point °F (Method)		
Fire Point °C	None to boiling pt.	
Heat of Combustion		
Heat of Formation		
Thermal Stability (cal./kg/min.)		
Latent Heat of Fusion		
Latent Heat of Vap.		
Specific Heat		
Critical Temperature		
Critical Pressure		
Dissociation Constant		
Other Constants		MONS 036906
Toxicity (Give Reference)		

NOTE: *These data should not be released outside of Monsanto Chemical Company. Use additional sheets if necessary.*