

IN THE COURT OF COMMON PLEAS

SUMMIT COUNTY, OHIO

GENCORP,

Plaintiff,

-vs-

JUDGE CAMPBELL

CASE CV 89 04 1208

AETNA CASUALTY AND
SURETY COMPANY, et al.,

Defendants.

- - - -

Deposition of PAUL GANN, taken as if upon
direct-examination before Pamela S. Greenfield, a
Registered Professional Reporter and Notary
Public within and for the State of Ohio, at the
Sheraton Harbor Place, 2500 Edwards Drive, Fort
Myers, Florida, at 12:17 p.m. on Friday, October
23, 1992, pursuant to notice and/or stipulations
of counsel, on behalf of the Defendants in this
cause.

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On behalf of the witness.

1 PAUL GANN, of lawful age, called by the
2 Defendants for the purpose of direct examination,
3 as provided by the Rules of Civil Procedure,
4 being by me first duly sworn, as hereinafter
5 certified, deposed and said as follows:

6 DIRECT EXAMINATION OF PAUL GANN

7 BY MR. DUCHOWICZ:

8 Q. Mr. Gann, would you state your full name for the
9 record?

10 A. Paul William Gann.

11 Q. Let the record reflect this is the deposition of
12 Mr. Paul William Gann which is being taken
13 pursuant to notice and that Mr. Gann is appearing
14 here today voluntarily.

15 A. Yes, sir.

16 Q. And not under a subpoena and that we are taking
17 his deposition in accordance with the Ohio Rules
18 of Civil Procedure and any stipulations as to
19 objections which have been incorporated
20 apparently into the case management order.

21 -Mr. Gann, as you know, I'm going to be
22 asking you a series of questions about your
23 involvement with General Tire & Rubber with
24 respect to a product called FR-1 heat transfer
25 oil and any either sales or withdrawal of

1 material from the marketplace or conversion of
2 the product from other plants.

3 If at any time you do not understand what
4 I'm asking you or Mr. Occhipinti or anyone else
5 here, please so indicate and I'll try to either
6 rephrase the question or ask it in a different
7 manner so that at all times you understand what I
8 or anyone else here is asking you, and answer out
9 loud so we know how you're responding, yes, no.

10 Also ask you to answer orally. If you mean
11 yes, say yes instead of uh-huh or hu-huh. It's
12 kind of hard to translate or read back when
13 you're reading it later on in a transcript.

14 Okay?

15 A. Okay.

16 Q. Sir, where do you currently reside?

17 A. Address?

18 Q. Yes.

19 A. 1006 Southwest 18 Terrace, Cape Coral, Florida.

20 Q. And what is your telephone number?

21 A. Area code 813-458-4704.

22 Q. How about your Social Security number,
23 if you can remember it?

24 A. I can give you my Army serial number better than
25 I can give you my Social Security number.

1 299-26-7926. Let me verify it. That's correct.

2 Q. 299?

3 A. 299-26-7926.

4 Q. And how old are you?

5 A. 69.

6 Q. What is the highest level of formal education
7 that you have?

8 A. BS in chemical engineering.

9 Q. Approximately when did you receive that?

10 A. 1947.

11 Q. Any formal education in chemistry or formal
12 training in chemistry after receiving the BS in
13 chemical engineering?

14 A. No. You're referring to academic training?

15 Q. Yes.

16 A. No.

17 Q. How about on-the-job training? When did you
18 first become employed at Monsanto?

19 A. By my recollection, July the 14th, 1947.

20 Q. And during the course of your employment at
21 Monsanto, did you become familiar with a product
22 known as FR-1 heat transfer oil?

23 A. Yes, sir.

24 Q. When did you first, approximately when did you
25 first learn about that particular product?

1 A. I needed help in recollecting. I had to go by
2 analysis of when we moved to Pensacola, Florida,
3 so I knew it had to be before 1973 and it had to
4 be after 1968 when I moved to St. Louis and then
5 I deciphered by reasoning that it had to be in
6 the latter part of that period and it wasn't
7 until I saw some documents that I realized the
8 specific dates.

9 Q. And did those documents help refresh your
10 recollection as to when you first had any
11 involvement at all with a product called FR-1?

12 A. It depends on how precise you want to be on when
13 I had the first recollection.

14 My involvement was, I can't give you, from
15 the memos, I have to go by that and they say, I
16 had a date on one of them where my name appeared
17 and that was in 1971. I do not recollect from my
18 own brain that that was the date that I was
19 involved in it.

20 Now, I may have heard of FR-1 before, but
21 not in conjunction with my involvement with it.

22 Q. Let's go just generally into some of the products
23 which we may be discussing here today.

24 What was FR-1? What is it?

25 A. Well, it's an aerochlore, it's a polychlorinated

1 biphenyl.

2 Q. Do you know the approximate content, does that
3 product contain PCBs?

4 A. That is a PCB, polychlorinated biphenyl is a PCB.

5 Q. Is FR-1 100 percent PCB?

6 MR. OCCHIPINTI: Object to form.

7 A. I don't know.

8 Q. Do you know what is contained in, what comprises
9 FR-1 chemically?

10 A. Carbon, hydrogen and chlorine.

11 Q. And what is, if you know, a PCB, I mean a
12 polychlorinated biphenyl? Is that -- is FR-1 and
13 PCB synonymous?

14 A. That, I don't know. I think people, I think
15 there are many PCBs in people's mind. I do not
16 know what people call a PCB. I know that
17 specifically whether it's got one chlorine on it
18 or multiple chlorines on it, I don't know at what
19 point it has to be a polychlorinated. I presume
20 that means more than one, but how many chlorines
21 are on there before it defines the PCB, I haven't
22 the foggiest idea. Is that -- I'm not sure I'm
23 answering your question.

24 Q. Do you know what the components of FR-1 --

25 A. Not specifically.

1 Q. Is PCB or polychlorinated biphenyl one of the
2 components of FR-1?

3 A. That's my understanding.

4 Q. Do you have any understanding as to the
5 approximate percentage that --

6 A. Not today. I can't recall any composition in my
7 mind. I can't give you a number of percentage of
8 chlorination in there. I can't give you a number
9 of, whether there is other materials other than
10 the polychlorinated biphenyls in there, I do not
11 know.

12 Q. Do you recall ever seeing FR-1?

13 A. Yes.

14 MR. OCCHIPINTI: I'm going to object
15 to the form. You mean the letters FR and
16 the Number 1?

17 MR. DUCHOWICZ: No. I said the
18 chemical. The product.

19 A. The material?

20 Q. The material.

21 A. The material, yes, I've seen it.

22 Q. Okay. Oh, by the way, to your knowledge, does
23 FR-1 stand for anything? Is it an acronym for
24 anything? Strike that.

25 Does FR-1 stand for anything?

1 A. Well, the PCBs were nonflammable material,
2 relatively speaking and the FR, I interpret as
3 meaning flame resistant.

4 Q. With respect to the chemical itself, do you
5 recall what color it was?

6 A. The material that I saw was dark, but I'm not, I
7 do not know if it was used material or new
8 material.

9 Q. So as you sit here today, you don't, well, okay,
10 when you say dark, what do you mean?

11 A. I won't say black, but it was very, very dark in
12 color. You could not see, if you had a bottle a
13 couple inches in diameter, it's pretty, you
14 couldn't see through it directly.

15 Q. You indicated that you don't recall whether you
16 saw clean or used?

17 A. Yes. I don't know if it was virgin material or
18 well-used material.

19 Q. Do you know what years Monsanto sold a product
20 called FR-1?

21 A. I do not know when they went into production on
22 it.

23 Q. Do you know approximately when it was being sold?

24 A. Approximately?

25 Q. Yes, approximately.

1 A. The aerochlores, which FR-1 is one of the
2 family. I don't -- wait a minute. No, I do not
3 know when FR-1, because that's a heat exchange
4 aerochlore, I do not know when they went into
5 production on that.

6 Q. Do you know when, was that -- strike that.

7 Did Monsanto ever cease to sell FR-1?

8 A. Yes. They took it off the market.

9 Q. Well, when did they take it off the market?

10 A. By looking at the memos, it was around during the
11 period of 1972.

12 Q. Do you recall, do you know why or the reason that
13 was given for it being withdrawn from the
14 market?

15 MR. OCCHIPINTI: Object to form.

16 A. Now, it's a question what did I know.

17 Yes, there was some contamination of the
18 product in materials that was causing an
19 environmental, I guess we would classify it as an
20 environmental, that it was affecting some life
21 forms.

22 Q. Contamination of other products with FR-1 that
23 you're referring to?

24 A. Yes.

25 Q. During the, at the time that the product, FR-1,

1 was withdrawn from the market -- strike that.

2 The potential environmental problems
3 associated with FR-1, do you know if those
4 dangers were ever communicated to any customers
5 of Monsanto?

6 MR. OCCHIPINTI: I'm going to object
7 to the form and you're building testimony
8 into your question that isn't in the
9 record. I think it's just probably the way
10 you put the question together more than
11 anything else.

12 Q. Were there environmental dangers associated with
13 the product FR-1, to your knowledge?

14 MR. OCCHIPINTI: When?

15 Q. Back in 19 -- at the time that it was withdrawn
16 from the market?

17 A. There are reports of environmental problems.

18 Q. To your knowledge, were any of those reports of
19 environmental problems communicated to customers
20 of Monsanto at that time, again, in the period
21 that it was being withdrawn from the market?

22 A. Dealing with the heat exchange fluids?

23 Q. Yes.

24 A. Yes.

25 Q. How was that, those environmental problems, how

1 were those environmental problems communicated to
2 customers of Monsanto at that time?

3 MR. OCCHIPINTI: Object to form.

4 Reports of environmental problems was your
5 previous question.

6 Q. Well, let me rephrase it, then, using that
7 language. How were the reports of environmental
8 problems communicated to customers of Monsanto?

9 A. I cannot state all communications. I know in
10 some of my communications, I think there was a
11 government report that was attached to some of my
12 letters and Monsanto had prepared a report or
13 brochure or a letter that I believe was sent to
14 all the known users of the Therminols.

15 Q. You said, you used the term Therminol.

16 What do you mean by Therminol?

17 A. Well, Therminol, FR-1 is one of the Therminols.
18 It's a, Therminol, I believe, was the general
19 term used for the family of products that would
20 be used in heat exchange systems. Therminol
21 being, reflecting the temperature, so I believe
22 it was a part of the family of Therminols.

23 Q. Who at Monsanto during the period that FR-1 was
24 being withdrawn had any responsibility with
25 respect to communicating this report, brochure or

1 letter regarding reported environmental problems
2 of FR-1 to customers of Monsanto?

3 A. I for one, but your question was who is
4 responsible?

5 Q. Well, who did it?

6 A. Quite a few. In the course of my work on this
7 issue, I would communicate and Cumming Paton, who
8 I worked for, I know he communicated; and
9 possibly prior to my time, other communications
10 may have gone out. I don't know.

11 Q. Now, you recall communicating the reported
12 environmental problems of FR-1 to various
13 customers of Monsanto, is that correct?

14 A. Yes. I recall sending, but I had to have my mind
15 refreshed. This is not an automatic recall, that
16 there were reports that would be attached to some
17 of my communications, depending upon the nature
18 of the communication, to give further background
19 as to why Monsanto was taking the action.

20 Q. Other than these reports, do you recall whether
21 there was a, you used three terms altogether and
22 I don't know if you meant one.

23 You said Monsanto communicated either a
24 report, brochure or letter regarding the reported
25 environmental problems with FR-1. What do you

1 mean?

2 A. Okay. I can't say if this is my recollection or
3 my understanding. I'm sorry, I have a little
4 problem being sure where my thought processes are
5 on that time.

6 This is 20 years ago and I'll admit, I don't
7 have a hundred percent recall.

8 There was, again, I'm refreshed by looking
9 at some of the material, memos and all, the,
10 apparently there was a report that was either
11 published in a journal or received from the
12 government or something, but dealing with the PCB
13 environmental question or toxicity question. I
14 can't recall what the detail of that report was,
15 but it was a report that would give background to
16 people as to, that would help get them to
17 understand why Monsanto was taking the action
18 they did.

19 I, number two, would be memos or letters
20 that were issued by me and others that would
21 contain commentary relative to the environment
22 would not be detailed but it would reflect that
23 this material needs to be, that we're
24 discontinuing it and needs to be returned and
25 Monsanto had a brochure on conversion that was

1 sent out.

2 Whether they had a brochure or a document
3 dealing with the environmental issue, it's not
4 surfacing. It just isn't surfacing.

5 - - - -

6 (Thereupon, Gann Exhibit 1, 14-page
7 Therminol Conversion Bulletin, was marked for
8 purposes of identification.)

9 - - - -

10 Q. Mr. Gann, handing you what's been marked as
11 Exhibit 1, would you please take a look at that
12 document and then tell us if that is a copy of
13 the Therminol conversion bulletin which you
14 believe was sent out?

15 A. It appears to be a copy of the conversion
16 bulletin.

17 Q. Was there more than one conversion bulletin which
18 was distributed?

19 A. I don't recall. I know they had prepared a
20 conversion bulletin that was used by the
21 engineers and by the customers that had to
22 remove, and you can see the word Therminol FR-1,
23 FR-1 is one of the Therminols.

24 This is on Page 3.

25 Q. Of Exhibit 1?

1 A. Yes.

2 Q. Okay. We'll come back to that. But since you
3 brought it up, I just wanted to show you that.

4 A. Okay.

5 Q. Other than the brochure, the memos or letters
6 issued by you and others commenting on the
7 discontinuance of this product and a government
8 report, were any other written materials, to your
9 knowledge, supplied to Monsanto's customers
10 regarding the withdrawal of FR-1 from the market?

11 A. Anything other than memos, letters, brochures as
12 far as what we handled? I'm not, I don't recall
13 anything. I think that's pretty broad brush.

14 Q. Were you familiar at all with a product known as
15 Therminol 55?

16 A. Yes.

17 Q. What was Therminol 55?

18 A. Chemically, I don't recall. Use-wise, it was
19 used as a flushing agent in heat exchange systems
20 to flush out the heat exchange system to remove
21 the PCB Therminols.

22 Q. Was that, did it have any other functions other
23 than that, to your knowledge?

24 A. It could, just from reading the bulletin, you're
25 saying from my knowledge, from recall?

1 Q. Well, if the bulletin will help refresh your
2 recollection, use it.

3 A. It was sold as a Therminol and therefore, it
4 could be used as a heat transfer fluid; but
5 Therminol 66 was a preferred replacement.

6 Q. So the product Therminol 55 or Therminol 66 could
7 be used as a replacement for the FR-1?

8 A. I don't want to say that. Therminol 66 could
9 be. I do not know about Therminol 55. Therminol
10 55 was used, sold, to my understanding primarily
11 to aid in the flushing out of the equipment.

12 Therminol 66 was a replacement fluid,
13 nonPCB.

14 Q. To your knowledge, did Therminol 55 contain PCBs?

15 A. Not as a virgin material. Only when it's used.

16 Q. When it was used to flush out other material?

17 A. Yes. When it got through flushing, it would have
18 PCBs in it. But it itself was a nonPCB product.

19 Q. Are you familiar with one other product, and you
20 may have seen this somewhere in some of the
21 documents, called MCS-681?

22 A. That is not ringing a bell. I haven't seen any
23 document with that on it.

24 Q. Back during the period of, let's start with 1970,
25 approximately. I know you worked at Monsanto for

1 quite a few years before then, but in 1970, what
2 was your position with Monsanto, if you recall,
3 approximately 1970; '69, '70?

4 A. I never worked on the same job more than a couple
5 years, which was to my liking, too. It was
6 exciting.

7 In 1970, I could have been working on the
8 Vicam project. That's a Nylon-6 polymer that was
9 used for making furniture for Disney World.
10 Again, I'm not positive of the exact time, but
11 that was probably about where I was.

12 Q. Did you ever become involved in the withdrawal of
13 FR-1 from the market?

14 A. Yes.

15 MR. OCCHIPINTI: Asked and
16 answered.

17 Q. Approximately when did you first have any direct
18 involvement in the withdrawal of the product?

19 MR. OCCHIPINTI: Object. Asked and
20 answered.

21 Q. Go ahead, you can answer it unless your attorney
22 instructs you not to.

23 MR. CHAMBERS: No, go ahead.

24 MR. OCCHIPINTI: If I say something,
25 it's just for the record.

1 MR. DUCHOWICZ: Yes. Your attorney
2 will tell you if you should not say
3 anything.

4 MR. CHAMBERS: Okay. Off the
5 record.

6 - - - -
7 (Thereupon, a discussion was had off
8 the record.)

9 - - - -
10 A. I could not recollect clearly without the help of
11 seeing some of the correspondence and so it
12 appears that I was on the project of the
13 assignment for aiding in the withdrawal of the FR
14 from heat exchange systems, late 1971 and into a
15 good chunk of 1972.

16 Q. What were, as of late 1971, what were your
17 responsibilities with respect to the withdrawal
18 of that product from the market?

19 A. I was assigned as I guess a coordinator-type job
20 to contact all users and to find out all users we
21 may not have knowledge of, if we could, in other
22 words, lead up, follow up any leads we get from
23 anywhere as to who may be using FR products and
24 advise them that Monsanto was withdrawing the
25 product and that we recommended their sending the

1 product back to Monsanto and cleaning out their
2 equipment and that we would work with them
3 technically in their accomplishing the job; and
4 in the performance of that, I would send them
5 some of the bulletins relative to PCBs'
6 environmental concern.

7 Q. At that time, was anyone else, did anyone else at
8 Monsanto have the same responsibilities as you
9 have just described?

10 MR. OCCHIPINTI: Object. Asked and
11 answered.

12 Q. In other words, were there other people doing the
13 same thing that you have just described?

14 A. Not doing, not to my knowledge doing the same
15 thing.

16 Q. There were other people that reported under you
17 who did --

18 A. No. They didn't report to me. They reported
19 more or less to Cumming Paton as I reported to
20 Cumming Paton.

21 Q. Who was Cumming Paton?

22 A. Other than my boss, I looked at him as the man
23 who was directing the program to withdraw this
24 fluid from the market.

25 Q. Okay. I guess what I'm getting at is you've

1 indicated contacting users and identifying other
2 users from leads.

3 A. Yes.

4 Q. My question is was there anyone else at Monsanto
5 who was also contacting customers and following
6 up on leads just like you were? In other words,
7 was there a room of three or four people doing
8 basically the same thing or were you the only
9 person?

10 A. No. I would get information from field people.
11 If the salesmen ran into people using the
12 material, yes, they would alert me who was using
13 it. Our engineers, there were a group of
14 engineers assigned to work with customers to aid,
15 if they could, in the how to remove the PCBs from
16 their system or if they were having mechanical
17 problems, they might have some recommendations.

18 Q. To your knowledge, did you then make contact with
19 all of the at least known customers of Monsanto
20 who had been using FR-1 with respect to the
21 withdrawal of that product?

22 A. I attempted to make contact either by mail or by
23 phone to all the customers or users of PCB.

24 Q. And you --

25 A. -- of the Therminol FR, excuse me.

1 Q. You described five or six, possibly more, things
2 which you did with the withdrawal of the product
3 from the market, including advising them of the
4 withdrawal and recommending the return of FR-1,
5 recommending the cleaning out of their systems.

6 To your knowledge, did you advise all the
7 customers that you made contact with as to those
8 particular items?

9 A. That was my job and my intention was to advise
10 everybody and therefore, all I can say is I hope
11 I advised everybody because that's exactly what I
12 was to do.

13 MR. OCCHIPINTI: Let me just note my
14 objection to the form and a point of
15 clarification. I mean, one of the things he
16 mentioned was identify all users. Is your
17 question whether or not he notified all
18 customers that he was identifying all
19 users?

20 Q. No. My question is to your knowledge, did you
21 advise all users or recommend to all users that
22 they clean out their equipment as a part of the
23 withdrawal of FR-1?

24 A. Let me put this in a little different light.

25 The, what I call the project which I was on,

1 whether I did it personally or other people sent
2 out information or contacted customers would be
3 people other than myself, yes, I was one. I was,
4 and I was a contact. It was my phone that people
5 would call about returning material or anything
6 to this sort, but I expect that there were other,
7 even before I got on the project, perhaps letters
8 may have gone out to their customers. I'm not
9 sure I'm answering your question.

10 Q. I think that doesn't. Again we're talking about
11 generally for all the customers which you had
12 contact with.

13 At the time that they were advised of the
14 withdrawal of FR-1, did Monsanto provide them
15 with possible alternative Therminols or heat
16 transfer oils that could be used; in other words,
17 suggestions as to what to do now that we're no
18 longer going to sell you FR-1?

19 A. Yes. We advised them that we had Therminol 66
20 available.

21 Q. Anything else?

22 A. No. That was a replacement fluid. I think it
23 was the only replacement fluid that I was aware
24 of that we had.

25 Q. Okay. To your knowledge, were they also advised

1 that there were other nonMonsanto products which
2 could be substituted for FR-1?

3 A. I'm not sure what I said to them relative to
4 that. We know that some customers were
5 converting over to nonMonsanto products. Whether
6 that came up in conversation, whether or not I or
7 anybody else advised them, yes, there are other
8 products out there other than Therminol 66. If
9 you're in that business, you're going to know. I
10 mean, if you're a purchasing agent for heat
11 exchange fluids, it's your job to know other
12 products, but I can't say what I told them
13 because I don't recall that kind of specifics.

14 Q. Were there, was there something called a
15 conversion team?

16 A. Yes.

17 Q. What was a conversion team?

18 A. A group of engineers who had the technical
19 capability of either advising or working with
20 customers on specific heat exchange conversion
21 problems.

22 Q. Was there --

23 A. I'm referring to mechanical problems, not
24 economical problems or political problems.

25 Q. Was there a conversion team? How many conversion

1 teams were there?

2 A. I'm only aware of one conversion team, a group of
3 engineers.

4 Q. What individuals, if you recall, were members of
5 this conversion team?

6 A. By name?

7 Q. Yes.

8 A. I've got a problem. I can see faces. I can't
9 see names. Now, I have been made aware of one
10 name because I saw some documents, but I don't
11 think I would have come up with any names without
12 seeing some documents.

13 Q. What name do you recall?

14 A. Well, Danzer is the only name I've seen on a
15 document and he's the only one I can.

16 Q. What was his first name, do you recall?

17 A. No.

18 Q. Are you familiar with a gentleman by the name of
19 Robert Roder, R-o-d-e-r?

20 A. Bob Roder?

21 Q. Bob Roder?

22 A. Jim Roder. Am I lying? Is it Jim?

23 Q. I don't know. Hold on a second.

24 MS. REUSZE: I think it's James.

25 MR. OCCHIPINTI: It is James.

1 Q. Let's assume it's James. Do you recall a James
2 Roder?

3 A. Yes, sir.

4 Q. Who was he? First of all, was he a member, was
5 he part of the conversion team?

6 A. I don't consider, in my ball game, I didn't
7 consider him part of the conversion team in the
8 same sense that the engineers and myself were on
9 the conversion team.

10 Jim, I believe, was a salesman and I didn't
11 look to him as a member of the conversion team.
12 I looked at him as a hell of a good salesman.

13 Q. You didn't rely on him for any technical
14 expertise in the field, correct? Strike that.
15 Let's withdraw that.

16 Were you a member of the conversion team?

17 A. My, I interpreted myself as being part of the
18 conversion team as a coordinator, if you wish.

19 Q. Did you ever observe or see any of the
20 conversions of any customers' systems actually
21 taking place?

22 A. No.

23 Q. Did you ever go out to any of the customers'
24 facilities during when the conversion was taking
25 place?

1 A. No.

2 Q. How about prior to conversions taking place?

3 A. No.

4 Q. Did anyone at Monsanto have any responsibility to
5 go out -- strike that.

6 Did anyone at Monsanto have any
7 responsibility to actually be at a site while a
8 conversion was taking place just generally? I
9 mean, I know there could have been exceptions.

10 MR. OCCHIPINTI: Did you say have
11 occasion to?

12 MR. CHAMBERS: I think you phrased
13 that have responsibility to and if you
14 wouldn't object to rephrasing it to have
15 occasion to, I think that's a little
16 better. Well, maybe not. Maybe you want to
17 start with responsibility.

18 Q. Let me ask you this: With respect to any
19 conversions which took place with FR-1 to another
20 product, let's assume that a Monsanto product,
21 the conversion material, being T-66, Therminol 66
22 or something else, did anyone in those situations
23 at Monsanto have the responsibility to be present
24 during the conversion process?

25 MR. OCCHIPINTI: Note my objection

1 to form.

2 A. The word responsibility is what I'm hung up on.

3 MR. OCCHIPINTI: Me, too.

4 A. I believe --

5 Q. Well, let me withdraw it, then.

6 To your knowledge, did anyone from Monsanto
7 go out to the site during --

8 A. A conversion?

9 Q. -- a conversion?

10 A. I think so.

11 Q. Do you know if that was done on more than one
12 occasion or do you think it might have been more
13 than one occasion?

14 MR. OCCHIPINTI: More than one
15 occasion per conversion, per customer or,
16 I'm not sure what you're asking.

17 A. I'm having a problem of knowing whether these
18 engineers went out before the conversion to aid
19 in discussions of any problems that the customer
20 might want to discuss on the mechanical set-up
21 that they have or whether they were out there
22 during the conversion. I cannot recall the
23 differential conditions there. I can't say.

24 Q. Okay. Let's talk with respect to the general
25 procedure of how Monsanto conducted or oversaw

1 the withdrawal of its product from the market but
2 particularly with respect to conversions.

3 In the normal course of events, did someone
4 from Monsanto, in particular an engineer, visit
5 the site where the conversion was going to take
6 place?

7 A. My recollection is the customer initiated the
8 request for an engineer to come out. I don't
9 recall, I just simply don't recall us initiating
10 a request. We may in a conversation or in a
11 letter might say that we have engineers available
12 that you can, you know, talk things over with,
13 but I can't in my mind come out with a specific
14 where an engineer was there at the conversion.

15 Q. Do you know if engineers ever went out to
16 conversion sites -- strike that.

17 I think you indicated that engineers, and
18 correct me if I'm wrong, that engineers on
19 occasion would go out to the site prior to the
20 initiation of the conversion, correct?

21 A. That's my recollection.

22 Q. To your knowledge, what was the purpose of those
23 visits to the site?

24 A. Oh, I thought I had stated that. To aid in
25 answering questions relative to some mechanical

1 circumstance that that particular site was
2 facing.

3 Q. Well, let me just, I'd like to go through a list
4 of a few names of people who may or may not be
5 associated with Monsanto and see if you can place
6 them in perspective as to where they are in this
7 whole chain.

8 A. Okay.

9 Q. A Mr. E.L. Shimley?

10 A. That name does not ring a bell.

11 Q. C. Paton is Cumming Paton?

12 A. Yes.

13 Q. D. Roush?

14 A. Don Roush.

15 Q. Who was he and again, if you know, with respect
16 to the conversion process?

17 A. I'm only oriented on conversion.

18 During the time, and I'm only oriented
19 during the time that I was involved in the
20 conversion process.

21 Q. All right.

22 A. Don was a, oh, what do you call him? A
23 technical, I don't want to call him a technical
24 salesman, but he was a technical support to the
25 sales people.

1 Q. What does that mean?

2 A. If you have technical questions relative to
3 characteristics of the product, how that product
4 is functioning in your particular system, he
5 would be, I would think, the first person
6 technically you would call.

7 Q. That would be before you'd go a level up to some
8 engineer?

9 A. This would be in the normal course of events. I
10 think this is what he was doing basically before
11 I got there, so he had this background.

12 During the conversion, he was one of our
13 technical resources.

14 Q. How was he a technical resource? What did he do
15 as a technical resource?

16 A. He knew many of the installations, knew of many
17 of the installations, may have visited some of
18 these installations and as a result, as these
19 installations came to a conversion situation, he
20 knew either the people there, which would help
21 us, or he could tell the engineers involved in
22 the conversion what they might expect if they go
23 up there to look at the equipment.

24 Q. P.L. Slayton. Do you know who that was?

25 A. Paul. Paul Slayton. My God, I hope I'm on the

1 right guy. If it is Paul, if it's the Paul
2 Slayton who I'm thinking of, he was involved in
3 the Therminol -- I'm sorry, not Therminols. The
4 polychlorinated biphenyls, the products that went
5 into the dielectric applications.

6 Q. Dielectrics?

7 A. Dielectric, transformers, electrical use.

8 Q. Did he have any involvement as far as you know,
9 with respect to heat transfer oil?

10 A. Not to my knowledge.

11 Q. How about a J.S. Pulman?

12 A. I think I've heard the name but he doesn't, I
13 can't help you on him.

14 Q. How about C.F. Seger or Seger, S-e-g-e-r?

15 A. That doesn't ring a bell at all.

16 Q. In the early 1970s when the withdrawal was taking
17 place, and I'll try not to keep on restating that
18 for every question but that's the area I'm really
19 concentrating on for the purposes of these
20 questions right here, were there different
21 procedures that were available -- strike that.

22 Were there different procedures which could
23 be followed to convert a heat transfer oil system
24 which had been using FR-1 to some other nonFR-1
25 product?

1 MR. OCCHIPINTI: Just note my
2 objection to the form of the question
3 insofar as you qualified when the conversion
4 was taking place. I'm not sure that came
5 from this witness. In fact I'm sure it
6 didn't come from this witness, the way you
7 described it.

8 Q. Well, in the 19, early 1970s?

9 A. Yes.

10 Q. Were there different procedures which could be
11 followed to convert from the FR-1-based heat
12 transfer oil system?

13 A. I'm having a problem with your concept of
14 procedure. I'm not aware of different
15 procedures.

16 Q. Well, were there different chemicals or compounds
17 used in the conversion process?

18 MR. OCCHIPINTI: Object to the
19 form.

20 A. Can I answer?

21 MR. OCCHIPINTI: Of course.

22 A. There again I had to be reminded when I saw some
23 documents that in certain, some cases, in some
24 heat exchange systems where it was necessary to
25 clean out further, more than just flushing out

1 with Therminol 55, draining and flushing out and
2 trying to get it all out that way, that they, I
3 think it was an acid treatment or some other kind
4 of treatment to help clean the equipment of
5 perhaps sludge or scale that might have developed
6 over the process of operation, so, yes, that
7 would be a different procedure that I think was
8 used in some cases.

9 Q. Okay. Let's back up to the first procedure or
10 process which you described earlier. You
11 indicated drain and flush out with Therminol 55?

12 A. You drain out all of the FR that you can. This
13 is generally speaking. I was never at a site, so
14 I don't know specifically what, how they
15 operated; but generally you drain, remove all the
16 fluid that you can remove and then you flush it
17 out with Therminol 55, collecting all of that, of
18 the 55, all of the flushings and then Monsanto
19 would have it all returned.

20 Q. All of the FR-1 would be removed from the system
21 and the system completely refilled with Therminol
22 55?

23 A. However the flushing was done. I don't want to
24 say it was refilled. They would flush it. How
25 they flush it, I cannot help you on that.

1 Q. But you --

2 A. Because I was never there.

3 Q. You have no knowledge as to how long the
4 Therminol 55 would remain in the system or if it
5 would just go straight through the system?

6 A. No. No. No. No. I'd have to read the
7 conversion bulletin and, but I was not involved
8 in that specific aspect of the conversion.

9 Q. What was the purpose of flushing the system?

10 A. To aid the removal of PCBs, any PCBs that is
11 retained after draining.

12 Q. And while any of the flushing material remained
13 in the system, flushing material would contain
14 the residual PCB, whatever would have been left
15 in the system, correct?

16 MR. OCCHIPINTI: Note my objection
17 to the form. Are you talking about what's
18 in the --

19 A. I know of no analysis to know what the PCB level
20 of the material was that was left behind. I'm
21 sure there was a molecule. I don't mean to be
22 facetious, excuse me. I have no idea how much
23 fluid would be retained in any system.

24 Q. But the purpose of the flushing material was to
25 remove the residual PCB?

1 A. To remove it, the residual, to a level to where
2 it would be reasonable, I guess not reasonable,
3 it would be satisfactory for operation.

4 Q. Again just general procedure, the FR-1 which had
5 been removed from the system, was that returned
6 to Monsanto?

7 MR. OCCHIPINTI: Again generally
8 speaking?

9 Q. Generally speaking?

10 A. Our request was to have all FR-1 drainings, any
11 FR-1 that they have on their premises and all
12 spent flushings returned to Monsanto.

13 Q. Why was that?

14 A. Because we had a facility to where we could
15 dispose of the material in a high-temperature
16 incinerator.

17 Q. Were the flushings to be, well, were flushings
18 returned to Monsanto also because they might
19 contain PCB, residual PCBs?

20 A. Yes.

21 Q. You indicated flushing material was placed into
22 the system as one of the ways it was converted?

23 A. If you're asking me, I was never at a system, so
24 I do not, have never observed and I do not know
25 with precision how a flush was operated.

1 Q. My question, though, is once the flushing
2 material had cleared the system, was the system
3 then refilled with other heat transfer oil?

4 A. I do not know. I could only assume. We would
5 recommend refill with Therminol 66. I hope I'm
6 answering.

7 Q. Yes. If you aren't, it's my job to come back
8 some other way; so assume that you have if we
9 keep on going.

10 Directing your attention to the, again the
11 period that you were involved in the withdrawal,
12 '71, late '71 at least through sometime in 1972,
13 when did you first become aware of a conversion
14 to take place with respect to the General Tire
15 Toledo facility, conversion from FR-1 to some
16 other material?

17 A. I could, I cannot recall anything from my brain.
18 I have to go to the memoranda to, and I don't, I
19 have to rely completely on the written document.
20 I don't, it does not stand out.

21 Q. Approximately, maybe we can get some
22 perspective.

23 Approximately how many conversions from FR-1
24 to some other material were you involved with?

25 A. My recollection it was hundreds, more than one.

1 Less than a million.

2 - - - -

3 (Thereupon, Gann Exhibit 2, one-page
4 December 28, 1971 Paton letter to Grubaugh, was
5 marked for purposes of identification.)

6 - - - -

7 Q. Mr. Gann, handing you what's been marked Exhibit
8 2, I'd ask you first of all if you'd take a look
9 at that document and tell us whether you recall
10 ever receiving a copy of it?

11 A. I can't say that I can physically or mentally
12 remember seeing this document. It is a document
13 similar to, I won't say exactly this kind of
14 document, but I can't remember individual
15 documents.

16 Q. Okay. There is a P.W. Gann listed at the upper
17 right-hand corner?

18 A. I have to assume that's me.

19 Q. Okay. Now, there is a checkmark or something
20 immediately to the left of that name?

21 A. Right. It looks to me like this came from my
22 files.

23 Q. Was that checkmark something that you would
24 normally place on anything which had been copied
25 or distributed to you?

1 A. My expectation is that this checkmark was made by
2 the secretary to mark who this copy went to. I
3 think it's a routing mark. Routing you do to a
4 sewer. It's a routing mark.

5 Q. Does this document at all help refresh your
6 recollection as to approximately when you were,
7 became aware of the Monsanto --

8 A. I have to rely a hundred percent on this date.
9 I'm, the fact it was December, 1971, I guess
10 that's true because this is what it says here. I
11 really can't give you from my own recollection as
12 to a timing any better than this.

13 Q. Do you have any reason to believe that you did
14 not receive a copy of what's been marked
15 Deposition Exhibit 2?

16 A. Oh, no, I have no reason to believe that I didn't
17 get it. I'm sure I got it.

18 Q. Are you familiar with a gentleman by the name of
19 Wayne Grubaugh from General Tire?

20 A. Not offhand.

21 - - - -

22 (Thereupon, Gann Exhibit 3, two-page
23 Conversion Action, was marked for purposes of
24 identification.)

25 - - - -

1 Q. Mr. Gann, handing you what's been marked Exhibit
2 3, I'd first of all ask you if you'd take a look
3 at that document and tell us if you recognize
4 what this is a photocopy of?

5 A. I recognize it. It's got my handwriting on it.

6 Q. What is it?

7 A. It looks like a kind of log sheet following the
8 progress of communication with a company. It
9 doesn't say who.

10

- - - -

11 (Thereupon, Gann Exhibit 4, two-page
12 September 21, 1972 Gann letter to Ransford, was
13 marked for purposes of identification.)

14

- - - -

15 Q. Would you take a look at Exhibit 4, briefly
16 review it and let us know when you've completed
17 that?

18 A. Oh, there is where your MCS-681. Okay.

19 Q. First of all, with respect to Exhibit 4, do you
20 recognize what that document is, the one that's
21 in your hand right now?

22 A. It appears it's a document that I sent out. I
23 cannot, again I can't recall, I can't put myself
24 back 20 years ago and say yes, I remember doing
25 this. I can't do that, but I would say that this

1 is certainly in line with what I was doing.

2 Q. With respect to, there is a gentleman listed at
3 the top, it seems to be addressed to a Mr. R.
4 Ransford.

5 Do you see that?

6 A. Right.

7 Q. First of all, do you recall having any direct
8 contact through either telephone calls or other
9 communications with anyone at General Tire with
10 respect to their conversion at the Toledo plant?

11 A. The only recall would be based upon my notations
12 here. I do not have any recall without the help
13 of this.

14 Q. You're indicating the Exhibit 3?

15 A. Exhibit 3, yes, where his, I think his name is
16 listed here, yes, on March 16th, called Ransford
17 to alert him on, yes.

18 Q. Let's go through some of the entries because
19 unfortunately, I had a hard time deciphering some
20 of the handwriting.

21 A. Well, -most people do and I was fortunate to have
22 secretaries that could decipher me.

23 Q. On Exhibit 3, the first entry at 3/16/72, is that
24 your handwriting?

25 A. It sure looks like my handwriting and that's the

1 way I initial things, or did at that time.

2 Q. Could you read that into the record so we're
3 certain what it specifically says?

4 A. Okay. Under Item 3, progress of conversion, date
5 March or 3/16/72. "Called Ransford to alert him
6 on need for five day or more lead time on 3,000
7 gallon tank --"

8 Q. It says TT?

9 A. It says TT. I can't believe we'd send a tank
10 truck, but maybe we did. "Delivery. He will
11 issue order next week."

12 Next item is, next entry is 3/16/72. This
13 is written apparently by an engineer called
14 Danzer.

15 Q. I'm not going to ask you to read other people's
16 handwriting.

17 A. Okay.

18 Q. What is the next entry that you recognize as
19 being yours?

20 A. September 6, '72 and I'm not sure that's my
21 handwriting.

22 Q. Is that September 6th or June 9th?

23 A. I'm sorry, June 9th. I'm sorry, my eyes
24 flipped. I apologize.

25 I do not know who, the name ends in Y. I

1 don't know who that is and I don't believe that's
2 my handwriting. The next item is August 7th,
3 '72. "Called Jordan, COP." That probably is
4 within Monsanto.

5 Q. Did COP mean something?

6 A. Well, I had some help on that. It could be
7 central order or something. I'm not quite, I
8 can't recall how this organization was set up. I
9 need more help.

10 "Called saying they were expecting."

11 Q. Is that expecting or expediting?

12 A. That could be expediting, yes. That they "called
13 saying they were expediting the MCS-6," and I
14 don't know what the next number is, and a one.

15 "Shipment but needed 10 drums of T-55
16 immediately for top-up."

17 Q. What was a top-up?

18 A. Well, a top-up would be where the fluid level in
19 their exchange, heat exchange system was below
20 their recommended operating level and they needed
21 to increase the fluid level within the heat
22 exchange system for it to operate effectively and
23 so apparently they were adding some Therminol 55
24 to their system for that purpose.

25 Q. Okay.

1 A. I can't get the next word, slash "Jordan" and I
2 have something with an arrow and it says,
3 "Uniroyal at Port Clinton bought 64 drums of
4 T-55 in June. Carol to check Shimley." My God,
5 that's the guy. Lousy memory.

6 "To see if can put 10 from them rather than
7 out of Chicago."

8 Apparently they're trying to get some
9 Therminol there quickly and they were trying to
10 figure out where to get it from.

11 That last statement was not written here.

12 September 18, '72. I'm going to say that's
13 Sipes, but that doesn't make sense.

14 Q. We don't want you to guess. It's deciphering of
15 your own handwriting and a bad copy.

16 A. Well, it's lousy writing and a lousy copy.

17 Trailer T-55 over loading sample indicated,
18 are loading sample indicated flakes of rust and
19 something high in boiling point. Maybe a 10, one
20 degree high in boiling point, parentheses, "Paton
21 said boiling point no issue," end of
22 parentheses.

23 "Customer had started unloading Monday,"
24 that's September 18th, when, sure looks like
25 Sipes, called.

1 "Customer not notified of possible scale
2 problem. Assume his system," I don't know what
3 that word is. "Customer has 1,000 gallon more of
4 Therminol 55 than needed."

5 Q. Could you read the handwriting under the date of
6 9/18?

7 A. Oh, on the right? Discussed between Sipes and
8 Roder, Sipes and Roder. I can't say that's
9 Roder. And I can't figure out the last two, the
10 last word looks like night. Friday night, that's
11 what that says. Discussed between Sipes and
12 somebody Friday night.

13 Q. Okay. Let's stop right there with respect to
14 trying to go through your notes. We'll probably
15 get back to it and pick up.

16 Backing up, does Exhibit 3 help at all
17 refresh your recollection as to whether you were
18 directly involved in the conversion of the system
19 at the Toledo plant as of March of 1972?

20 A. Is that where Clinton is? Port Clinton? Is that
21 Toledo? No. I don't know that this was the
22 Toledo plant. I can't, see, I can't recall any
23 company specifically, is the problem that I have
24 with you.

25 I have to rely completely as to what

1 verbiage is available and I can only vouch for
2 the fact that I think this verbiage is correct.

3 Q. Does this document help refresh your recollection
4 that you were dealing with a Mr. Ransford with
5 respect to the conversion of some heat transfer
6 oil system in March of '72?

7 A. In March, I called a fellow by the name of
8 Ransford. This document doesn't tell me where he
9 was or who he worked for.

10 Q. Directing your attention to Exhibit 4, which is
11 the letter next to you, does that help refresh
12 your recollection as to who Mr. Ransford was?

13 A. Well, it doesn't affect my recollection because I
14 don't recollect. It's just that this Ransford
15 here obviously, well, not obviously, I assume is
16 the same Ransford.

17 Q. After, earlier I had asked you a few questions
18 about a product by the name of MCS-681?

19 A. Correct.

20 Q. Do either of these two documents, Exhibits 3 or
21 4, help refresh your recollection as to what that
22 chemical or product was?

23 A. No. The number looks familiar but the product
24 identity has not surfaced yet in my brain. I
25 just can't help you.

1 Q. Do you recall whether that particular product,
2 even though you don't know the identity, was used
3 in any of the conversion processes?

4 A. I can't say for certain whether it was or was
5 not. I can't even say for certain whether it was
6 a Monsanto product. The way it's presented here,
7 it appears to be a Monsanto product but I don't
8 know that for certain.

9 Q. Do you recall what product General Tire used as a
10 substitute for the FR-1?

11 A. What they finally converted to?

12 Q. Yes.

13 A. I have no recollection of what any individual
14 company converted to.

15 Q. Okay. Do either of these two documents, Exhibits
16 3 or 4, help refresh your recollection as to what
17 product they eventually converted to?

18 A. No. No. Well, unless it says that they actually
19 converted to this product, and I'd have to, it
20 wouldn't be recollection, it would be what I
21 read.-

22 Q. Okay. Exhibit 4, was that document, was that
23 letter of yours accurate at the time that you
24 wrote it?

25 MR. OCCHIPINTI: Objection. Does he

1 remember writing it?

2 Q. Well, I think -- strike that.

3 Exhibit 4 I believe you've already
4 testified, and correct me if I'm wrong, is a copy
5 of a letter that you believe you wrote or sent?

6 A. That's true. I believe I wrote this. I do not
7 recollect physically writing it.

8 Q. At the time that you wrote this letter, do you
9 have any reason to believe that it was not
10 accurate?

11 MR. OCCHIPINTI: Does he have any
12 reason to believe today that what's in here
13 is not accurate? Is that what you're
14 asking?

15 MR. DUCHOWICZ: That was not
16 accurate at the time that it was written.

17 MR. OCCHIPINTI: Just note my
18 objection to the form of the question.

19 A. I have every reason to believe that at the time I
20 wrote this, I wrote this as accurate as I
21 possibly could.

22 Q. And as you sit here today, you do not recall any
23 of the contents, any of the facts which are set
24 forth in Exhibit 4 from personal recollection?

25 A. No, sir, I do not recall anything in personal

1 recollection.

2 Q. And having reviewed Exhibit 4, do you have any,
3 does Exhibit 4 help refresh your recollection as
4 to any of the facts set forth therein?

5 A. It does not aid in my recollection. It helps aid
6 my understanding of what was going on, but not on
7 recollection of a specific.

8 Q. Let me ask you some specific references in that
9 letter, see if it, as opposed to you generally
10 looking at a blanket letter.

11 A. Okay.

12 Q. On the second page of Exhibit 4, there is a
13 reference under blind note to carbonees. Do you
14 see that?

15 A. Yes.

16 Q. The first one says, Number 1, "Late July, '72,
17 the Toledo Plant lost about 1,000 gallons of
18 FR."

19 Do you see that?

20 A. Yep.

21 Q. Do you recall that event? Do you recall being
22 informed of that event?

23 A. Not in my mind.

24 Q. Other than what's set forth in this exhibit --
25 strike that.

1 Number 2 says, "The system conversion
2 requires shutdown of a major production unit.
3 This is the prime reason for the extended
4 emergency top-up."

5 Do you see that?

6 A. Yes.

7 Q. Do you recall there be being any --

8 A. I recall emergency circumstances. I do not
9 recall General Tire being one of them.

10 Q. Do you recall anyone from General Tire telling
11 you that there had been a loss of a thousand
12 gallons of FR in July or at any point in time
13 during the conversion process?

14 MR. OCCHIPINTI: Asked and
15 answered.

16 Q. You can answer.

17 A. I can answer?

18 Q. Yes.

19 A. I cannot recall the conversation. I only can
20 infer a conversation based upon the documents. I
21 can't recall a conversation on this.

22 Q. I'm not asking you, though, if you recall
23 specifically what you said but do you recall
24 being advised of there having been a loss of a
25 thousand gallons of FR from the General Tire

1 plant?

2 A. I do not recall being advised. All I can say is
3 I must have been advised by someone to make that
4 statement.

5 Q. Did General Tire receive a copy of the conversion
6 bulletin, the Therminol conversion bulletin from
7 Monsanto, and again directing you to,
8 specifically to the reference to the enclosure on
9 Exhibit 4?

10 MR. OCCHIPINTI: I object. This
11 witness is in no position to testify as to
12 what GenCorp received.

13 Q. General Tire was supplied with?

14 MR. OCCHIPINTI: Object to form.

15 A. Can I answer?

16 MR. OCCHIPINTI: Yes.

17 Q. Yes.

18 A. I only can say that based upon the
19 correspondence, that it would have been attached
20 to it. This one, yes, it says, wait a minute,
21 does it say that it included?

22 Q. Under enclosures?

23 A. Yes. Therminol enclosure bulletin. I'm
24 confident that it went out. Do I know that it
25 went out for sure, I can't recall.

1 Q. And as Mr. Occhipinti has pointed out, you have
2 no knowledge as to whether General Tire or
3 GenCorp, the successor, ever actually physically
4 received that conversion bulletin. All you know
5 is it went out with your letter, correct?

6 MR. OCCHIPINTI: Object to form. He
7 didn't say that.

8 A. I only can say that I am confident it went out.
9 I can't say that it went out. I don't physically
10 recall.

11 Q. You didn't physically put it in the envelope and
12 drop it --

13 A. I can't physically recall. I don't know whether,
14 it's very possible I could have put it in the
15 envelope. I can't physically recall doing it,
16 mentally recall.

17 Q. When Monsanto withdrew FR-1 from the market, it
18 had another product that could be substituted for
19 it called Therminol 66, correct?

20 A. Yes, sir.

21 Q. To your knowledge, could Therminol 66 be mixed
22 with FR-1?

23 A. You could mix it, but it would be an
24 unsatisfactory mixer. It would not perform
25 right. You're liable to get corrosion problems

1 and that defeated the purpose of a conversion.

2 Q. To your knowledge were there any other fluids
3 available after the withdrawal of FR-1 from the
4 market?

5 A. From Monsanto?

6 Q. Well, first of all from Monsanto which could be
7 mixed with FR-1 and still provide, mixed with
8 FR-1 for use in a heat transfer oil system?

9 A. I have no knowledge.

10 MR. OCCHIPINTI: Object to form.

11 A. Excuse me.

12 MR. OCCHIPINTI: That's all right.

13 A. I have no idea.

14 Q. You have no knowledge if there is anything else
15 from Monsanto?

16 A. For the application as you're describing it?

17 Q. Yes. Do you have any knowledge as to whether
18 there were any other manufacturers who provided,
19 who sold other products which could be mixed with
20 FR-1 in a heat transfer oil system?

21 A. I have no knowledge of that at all, no.

22 - - - -

23 (Thereupon, Gann Exhibit 5, one-page
24 April 4, 1972 Roder letter to Ransford, was
25 marked for purposes of identification.)

1

- - - -

2 Q. Handing you, Mr. Gann, what's been marked Exhibit
3 5, I would ask you if you'd take a look at that
4 document and also direct your attention to the
5 upper right-hand corner after the bcc indication
6 up there.

7 First of all, do you recall ever receiving a
8 copy of this document?

9 A. Not specifically.

10 Q. The letters at the top appear to be PWG?

11 A. I agree.

12 Q. Do you have any reason to believe that you did
13 not receive a copy of this document?

14 A. I agree with your statement. I have no reason
15 not.

16 Q. There is a reference in here to a product we've
17 talked about several times. MCS-681?

18 A. Right.

19 Q. Does this at all help refresh your recollection
20 as to what that product was?

21 A. All I can say is you're educating me. I could
22 not have come up with that alone.

23 Q. I'm not trying to educate you. I'm trying to jog
24 your memory.

25 A. I would not have come up with this and I had

1 forgotten all about this.

2 Q. Well, does that mean you've now remembered it?

3 A. I had not remembered MCS-681 until you brought
4 the subject up. Used as a heat transfer as an
5 alternate to Therminol 55, I would not have
6 remembered that at all. I don't remember that.

7 Q. Oh, you don't remember it?

8 A. No. I just don't remember that at all.

9 Q. Okay.

10

- - - -

11

(Thereupon, a recess was had.)

12

- - - -

13

14

MR. DUCHOWICZ: Pam has reminded me
that we have not entered into an out-of-town
court reporter stipulation.

15

16

17

MR. OCCHIPINTI: Pam and her court
reporting firm are welcome at any of my
depositions in this case anywhere.

18

19

20

MR. CHAMBERS: We don't object to
the use of an out-of-state court reporter.

21

22

MR. DUCHOWICZ: We can all agree.

MR. OCCHIPINTI: That's fine.

23

24

25

Q. Mr. Gann, as of September 21st of '72 and again
directing your attention to Exhibit 4, which
you've already I believe reviewed and if you want

1 to take a look at it again, please do; but as of
2 that date, had, to your knowledge, had the
3 conversion of the system at the Toledo plant been
4 completed?

5 A. I have no way of knowing that.

6 Q. Why don't you take a look at Exhibit 4 and see if
7 that helps refresh your recollection as to
8 whether there was anything yet to be done with
9 respect to the conversion of that system as of
10 September 21st of '72.

11 A. Can you repeat your question?

12 Q. Okay. As of the date of your letter, September
13 21st of '72, had the heat transfer oil system at
14 the Toledo plant, had the conversion of that
15 system been completed?

16 A. This letter indicates it had not been completed.

17 Q. Is that your best recollection as you sit here
18 today having reviewed --

19 A. I can't, I have to review the letter. I cannot
20 recollect the occasion.

21 Q. What in that letter indicates to you that the
22 conversion had not been completed as of that
23 date?

24 A. The statement, "I suggest immediate and complete
25 drain of your system, a thorough flush with a

1 nonPCB fluid i.e. (Therminol 55) and a refill
2 with fresh, nonPCB heat transfer fluid (rather
3 than diluting on the fly)."

4 Q. What did you mean when you said diluting on the
5 fly, if you recall?

6 A. Adding a nonPCB fluid as he is operating, which
7 we've discussed that although the fluids may be
8 compatible and as a later sentence indicates, I,
9 well, the previous indicates, too, that you can
10 get acids forming in sludge and fouling up the
11 heat exchange system, so he was trying to
12 apparently add fluid to maintain operating level
13 of heat transfer agent.

14 Q. To your knowledge, could the mixing of fluids as
15 described in your letter also result in increased
16 leakage from the system?

17 MR. OCCHIPINTI: Object to form.

18 Object on the basis there is no foundation
19 for that question.

20 A. May I answer?

21 Q. Yes, sir. And again I'm referring to the top
22 paragraph of Page 2?

23 A. It is, it would be, topping off is not the way to
24 go. We do not recommend adding any fluid to FR,
25 at that time. It was done in an emergency

1 situation, but as we explained in the letter, it
2 can cause acid forming problems.

3 Q. Did it also form --

4 A. Scaling.

5 Q. Could it also result in seal and rotary joint
6 leaks as referred to in the top paragraph of Page
7 2?

8 A. Apparently so, yes.

9 MR. OCCHIPINTI: I'm going to
10 object. You're mixing two different things
11 there. One you're talking about mixing of
12 the two oils as resulting in an experience
13 of seal and rotary joint leaks and the other
14 one is the existence of chloride, iron
15 chloride salts in the system as causing seal
16 and rotary joint leaks.

17 Now, unless those two things are
18 synonymous, I mean your question implies
19 that and I don't think that's proper, but
20 perhaps you should ask the witness.

21 MR. DUCHOWICZ: Okay. Maybe we can
22 clarify it.

23 MR. OCCHIPINTI: Do you see what my
24 concern is?

25 Q. Yes. I can see your concern.

1 Let's look at that top paragraph on Page 2,
2 first where it indicates or where the letter
3 states, "As discussed, you may have considerable
4 iron chloride salts in your system."

5 What would be the source of iron chloride
6 salts?

7 A. Probably from the breakdown of the PCB in the
8 system particularly in the presence of another
9 fluid in there.

10 Q. Another fluid such as?

11 A. Therminol 55. That's a supposition on my part.
12 I can't say exactly where these iron chlorides
13 would come from, but the iron chlorides would be
14 present in a long-run operation with PCBs. The
15 extent, I wouldn't know the extent of them.

16 Q. Okay. Maybe you've got two different things
17 here.

18 One, is it your testimony that the mixing of
19 FR-1, a PCB heat transfer oil, with Therminol 55
20 could result in there being iron chloride salts?

21 A. No, I don't think I could say that.

22 Q. Okay.

23 A. I'm not that knowledgeable today. I can't recall
24 the conditions in which the chloride salts form,
25 whether it's from materials like 55 being in the

1 system with this or whether it's from the use of
2 PCB and something else gets in there.

3 I can't come out and say today. I don't
4 recall what it is that causes a formation of the
5 salts. See, what I knew back then, I'm pretty
6 positive about; but what I know today, I'm having
7 a hard time recalling what I knew back then, if
8 that makes sense.

9 Q. Right. You also said something relating to --
10 strike that.

11 You indicated that somehow a breakdown of
12 PCBs in the system could result in iron chloride
13 salts?

14 A. I'm, that's a speculation. I don't know. I'm
15 not qualified today really to say what, where the
16 iron salts could come from. I'm, I think I was
17 reasonably qualified back 20 years ago, but by
18 God, I can't put that together right now.

19 Q. There is a reference in this letter to a sludge
20 condition?

21 A. Yes.

22 Q. To your knowledge, what could cause a sludge
23 condition in a heat transfer oil system?

24 MR. OCCHIPINTI: Jerry, could you
25 tell me where that reference is, please?

1 MR. DUCHOWICZ: The third paragraph
2 down there?

3 MR. OCCHIPINTI: On the first page?

4 MR. DUCHOWICZ: Yes. Where it says,
5 "you may find additional cleaning
6 necessary."

7 MR. OCCHIPINTI: Okay. I'm sorry, I
8 got it. Go ahead.

9 A. I'm the wrong guy for you to nail on this. I
10 cannot say for certainty what causes sludge.

11 MR. OCCHIPINTI: Well, is your
12 question how is it used here or generally
13 how can a sludge condition be caused in a
14 system like this?

15 MR. DUCHOWICZ: Generally.

16 A. Generally, I don't think I'm qualified to answer
17 that. It's not that I don't want to answer it, I
18 don't think I'm qualified. It would be
19 speculation today as to how sludge formed.

20 Q. Or how sludge can form in a heat transfer oil
21 system?

22 A. Or how sludge can form. I don't know, for
23 example, if water gets into the system whether
24 that would help cause sludge, whether air got in
25 the system, whether that helps cause sludge or

1 whether some other heat transfer fluid got into
2 the system, if that helped cause sludge. I'm not
3 able to or qualified to comment on that.

4 - - - -

5 (Thereupon, Gann Exhibit 6,
6 three-page October 9, 1972 Gann letter to Captain
7 of the Port Office, was marked for purposes of
8 identification.)

9 - - - -

10 Q. Mr. Gann, handing you what's been marked Exhibit
11 6, first of all I'd ask if you would review that
12 document and ask if you recall ever seeing it
13 before?

14 A. I think this was one of the documents I reviewed
15 with --

16 Q. Other than what you may have seen as documents in
17 the last several days. Do you recall seeing it
18 before then?

19 A. I can't recall writing the document, but I would
20 have expected, since it's got my name on here and
21 the nature of the document, that I must have
22 written it.

23 Q. There is certain handwriting on the bottom of the
24 second page and the third page of this document?

25 A. That looks like my handwriting.

1 Q. First of all, would you review this document and
2 I'd ask you if it helps refresh your recollection
3 as to being made aware ever of a spill or release
4 of any Therminol at the Toledo plant during the
5 conversion process?

6 A. I cannot recall the phone call specifically.

7 Q. The question, though, is does this help refresh
8 your recollection of having been informed in any
9 way that there had been a spill or a release of
10 Therminol at the plant during the conversion
11 process?

12 A. Was this during it?

13 Q. Well, you have to review the entire thing to be
14 able to determine it. I don't want to tell you
15 whether it is or it isn't.

16 A. It's a spill. I do not know when, what the
17 occasion was except by reading the letter and
18 maybe it will help, but I don't recall. This is
19 my problem. I can't recall the specifics.

20 Q. Why don't you read the letter and then, in full
21 and then let me see if it refreshes your
22 recollection. And just to interrupt you a
23 second, it might be more helpful for us all if
24 once you would get to the handwritten portion,
25 you would read that out loud to us because we all

1 might want to know what is written.

2 A. My note on Page 2, Item 2, B and C, I believe it
3 reads, "sounds like," I can't read the next two
4 words, but "must be T-55."

5 Q. Would that be fluid?

6 A. I think that word is must.

7 Q. No. The second line?

8 A. Oh, it could be fluid, yes, that second line
9 could be fluid. I can't figure that out. I sure
10 can't figure out the next.

11 Q. Okay. Why don't you go down to the bottom?

12 A. Okay. Well, it could be, this is speculation,
13 received. Speculation, "Sounds like fluid
14 received must be T-55."

15 Q. Okay. Let's go down to the bottom.

16 A. Dated 10/10/72. "Richard," I can't figure out
17 the name, "called General," which I -- "General
18 Tire to confirm which fluid was involved in the
19 spill. He confirmed it was T-55 and that PCB was
20 probably not involved. He appreciated our
21 follow-up," signed P. Gann, 10/10/72.

22 Q. How about the next page?

23 A. Dated, the next page noted is dated 10/11/72.
24 "Mr. Edward Noble," phone number given. "EPA,
25 Ohio District called for description." I can't

1 see the next word. "Toxicity info on T-55, which
2 is what General Tire spilled. I read off data
3 from T-55 bulletin and medical department
4 toxicity," and I can't figure out the next word.

5 "Told Noble to call Papa George for any
6 other information. Noble felt no real problem on
7 spill."

8 The next words are illegible.

9 "Both sides of bank coated and some may
10 have sunk." Parentheses, "looks like PCBs," end
11 of parentheses. And I can't figure out the rest
12 of the sentence. Although the word decision
13 appears present and then, "Coast Guard reported
14 spill to EPA Cleveland."

15 Q. The entry you read where it said parentheses
16 PCBs, do you know what that is in reference to,
17 or do you recall what that was in reference to?

18 A. No. No. I wish I could read the rest. And some
19 may have sunk, some may have sunk. Well, see,
20 PCB is apparent, but can you figure out if that
21 is a B or not, BS? I don't know and I do not
22 recall and this doesn't help me at all as to
23 where that arrived or that thought came from.

24 Q. Okay. Let's go back to Exhibit 3, which was the
25 original log notes or whatever you referred to

1 them as?

2 A. Yes, sir.

3 Q. And go on to the second page of that document
4 starting with the date entry there.

5 First of all, is that your handwriting?

6 A. It looks like my handwriting. I didn't put my
7 signature on it. It looks like my handwriting.

8 Q. Could you read that into the record for me?

9 A. 10/17/72. Item one, "per Paton's suggestion,
10 Gann called General Tire (Bob Ransford) to advise
11 them the coast guard had contacted us. I read
12 the letter portion of my October," and I can't
13 figure the date, "1972 letter to captain of the
14 Port Office."

15 Item 2, Ransford said they were trying to
16 keep the flush sludge out of the storage tank and
17 were filling drums. Some fluid spilled on the
18 floor which ran into sump. Unfortunately, sump
19 pump went directly to the sewer. Modification
20 now made to prevent sump from direct dump to the
21 sewer: "to sewer. " The word the is not in
22 there.

23 Item 3, "Therminol spill was actually flush
24 fluid and therefore probably contained some
25 PCB."

1 Q. First of all, does that refresh your recollection
2 of ever having been informed as to the course of
3 any oil release or spill at the Toledo plant?

4 A. You're asking me can I recall a conversation with
5 someone on this issue?

6 Q. Right. Not necessarily identifying who told you
7 or --

8 A. I can't recall, I'm sorry, I cannot recall
9 conversations or communications on this issue.
10 It's well documented, but I can't recall mentally
11 specific, you know, what happened back at that
12 time.

13 Q. But at least Page 2 of Exhibit 3 is a note
14 written by you, correct?

15 A. I believe it's a note written by me, correct.

16 Q. And written by you on or about the date that it
17 bears, October 17th of '72?

18 A. I would think it would have been written almost,
19 well, it's written on that date.

20 Q. And was that, was what you wrote there accurate
21 to the best of your knowledge at the time that it
22 was written?

23 MR. OCCHIPINTI: Objection.

24 A. Yes. Excuse me.

25 Q. That's okay. He's just making his objection for

1 the record.

2 A. Yes. I think it was as accurate as I knew at the
3 time.

4 Q. And as you sit here today, is there anything, as
5 you sit here today and having read that
6 statement, that has not helped refresh your
7 recollection as to the events stated therein, has
8 it?

9 A. You're correct. I cannot recall a communication
10 involving this.

11 Q. Let me just ask, I'd like to ask you a few
12 questions about some of the comments there just
13 to be more specific, as opposed to a general
14 blanket you don't recall anything.

15 There is a reference to a modification being
16 made to prevent the sump from direct dump into
17 sewer. Do you see that?

18 A. Yes.

19 Q. Just above the Number 3 entry?

20 A. Yes, right.

21 Q. Do you recall ever being told about any
22 modifications being made in the sump system at
23 the Toledo plant?

24 A. I cannot recall the 1972 involvement of myself
25 there. I only can read what I had written there.

1 Q. Okay. And do you have any recollection of
2 Mr. Ransford relating to you as set forth in this
3 document the manner in which a spill purportedly
4 took place?

5 MR. CHAMBERS: You'll need to speak
6 up for the benefit of the court reporter.

7 A. I'm sorry.

8 Q. That's okay. We're all waiting for the words.

9 A. I'm not on TV.

10 I do not recall the actual conversation with
11 Mr. Ransford.

12 Q. This Exhibit 3, was this listed as conversion
13 action, in the normal course of your role in the
14 withdrawal of FR-1 and conversions of systems,
15 was a document such as a conversion action, I'll
16 call it a memo, prepared in the ordinary course
17 of your business?

18 A. Yes. Yes.

19 MR. OCCHIPINTI: Objection. Object
20 to form.

21 A. Yes. This was a standard procedure that we used
22 to communicate, to log our commentary.

23 Q. And at the time that documents such as Exhibit 3
24 were prepared, was it the -- strike that.

25 Was Exhibit 3 or at least the entries in

1 Exhibit 3 which bear your signature, was that
2 prepared in the ordinary course of business of
3 Monsanto with respect to your role in the
4 conversion process?

5 MR. OCCHIPINTI: Object to form.

6 Objection on the basis that's been asked and
7 answered. And I also object to those
8 entries that have not been written by this
9 witness.

10 Q. You can answer.

11 A. I can answer?

12 MR. OCCHIPINTI: Yes.

13 Q. He's your attorney here.

14 MR. CHAMBERS: Unless I tell you or
15 instruct you not to answer something, you
16 should go ahead and answer if you're able.

17 Q. Yes. Allow the person making the objection to
18 finish their objection and then go ahead.

19 Do you recall what the question was?

20 A. You're asking is this typical of the way we
21 operated, this kind of form, did we use this kind
22 of form?

23 Q. No. My question is was Exhibit 3 prepared in the
24 ordinary course of your employment at Monsanto?

25 A. I believe so.

1 Q. And I believe you've already stated this; but at
2 the time this was prepared, it was the custom and
3 practice of Monsanto to have documents such as
4 Exhibit 3, the conversion action, prepared as
5 part of the process of doing these conversions,
6 correct?

7 A. Yes.

8 MR. OCCHIPINTI: Object to form.

9 Asked and answered.

10 Q. As you sit here today, do you have any
11 recollection or knowledge as to what General Tire
12 did with the FR-1 material which was drained from
13 its heat transfer oil system?

14 A. I have no recollection of that specific.

15 Q. Same question with respect to any flushing
16 material which may or may not have been used in
17 the system.

18 Are you aware of what General Tire did with
19 any flushing material which was used to clean the
20 system?

21 A. I have no recollection of that. The only thing I
22 can do is refer back to the documents we've
23 looked at to help, but I don't recall. I can't
24 recall a specific incident.

25 Q. Okay. From the documents at least that you've

1 reviewed so far today, did you see anything in
2 there which memorializes what was done with the
3 FR-1 or flushing material which was removed from
4 the heat transfer oil system?

5 MR. OCCHIPINTI: The exhibits he's
6 looked at today or the documents he looked
7 at before the deposition?

8 MR. DUCHOWICZ: The documents either
9 that he's looked at today or prior.

10 A. I don't know if I've seen documents that shows a
11 return of the fluids to Monsanto.

12 Q. Do you recall seeing any documents referring to
13 any other disposition of the fluids from the heat
14 transfer oil system at the Toledo plant other
15 than a return to Monsanto?

16 A. I don't know that I've seen those documents
17 today. I've seen some documents that look like
18 documents referring to a return of fluids. I
19 don't know if they were from, I guess they were
20 from General Tire, but that would be the, I'd
21 have to go by documents to tell me whether or not
22 they had returned it.

23 MR. DUCHOWICZ: Just for the record,
24 Mr. Chambers, has Mr. Gann been provided
25 with any documents other than copies of

documents which have already been produced to all parties in this case.

MR. CHAMBERS: No. And that's a good point. We can clear that up. The record should reflect that I was able to meet with Mr. Gann prior to his deposition and provide him with some copies of documents that have been produced to all the parties in this case to give him an opportunity to refresh his recollection. The statements that he's made earlier about seeing documents relate to his review of those items --

A. Yes.

MR. CHAMBERS: -- in my understanding.

A. That is correct.

MR. CHAMBERS: But he has not been provided with anything by me that has not also been provided to all the lawyers here at the deposition.

Q. Let's go back to Exhibit 6, the letter dated October 9th of '72.

A. Yes.

Q. The section under, first of all, with respect to

1 the entire document, was this letter, was the
2 information contained in this letter true and
3 accurate to the best of your knowledge at the
4 time you wrote this letter?

5 A. I have no way, I don't know how to answer that.

6 MR. OCCHIPINTI: Same objection as
7 before.

8 A. I only try to write what is true and accurate
9 whenever I do it and I'm sure it was, my concept
10 of truth and accuracy at that time was as it is
11 today. I try to be as truthful as I can and
12 accurate.

13 Q. So the answer is yes?

14 A. I guess it's yes; but I, again, I can't recall
15 physically writing the letter. That's my
16 problem.

17 Q. I understand that. I think we all do. I wish I
18 could remember letters I wrote last week, let
19 alone 20 years ago.

20 Under note carbonees, Paragraph 4?

21 A. Yes. -

22 Q. Under C, there is reference to September 18, '72
23 shipped one, looks like one 3,000-gallon?

24 A. One 3,000-gallon trailer of Therminol 55.
25 Conversion targeted for October.

1 Q. Does that at all help refresh your recollection
2 as to whether the conversion of the system had
3 been completed as of, before October of 1972?

4 MR. OCCHIPINTI: Now you're asking
5 him a different date.

6 MR. DUCHOWICZ: I know, because the
7 other letter had a specific date on it.

8 This says the conversion targeted for
9 October. I'm asking him as of October 1st.

10 A. I can only go with what it says here.

11 Again, I can't recall the conversations. I
12 only can go by what we documented and it says
13 conversion is targeted for October.

14 - - - -

15 (Thereupon, Gann Exhibit 7, one-page
16 handwritten Conversion Action, was marked for
17 purposes of identification.)

18 - - - -

19 Q. Mr. Gann, handing you what's been marked Exhibit
20 7, first of all, do you recognize that as being
21 your handwriting under Section 3, progress of
22 conversion?

23 A. It looks like my handwriting.

24 Q. And where it says initiated by, is that your
25 signature or initial?

1 A. That's not my signature. I wrote just my last
2 name.

3 Q. Directing your attention to under the first date,
4 I can't tell if that's 1/18?

5 A. 1/19/72 is the way I'd read it. It looks like a
6 9 to me rather than an 8.

7 Q. I wasn't sure if that was a 10/18 as opposed to a
8 1 as to the other dates, but irrespective --

9 A. Are you referring to the top entry?

10 Q. Yes.

11 A. It sure looks like a 1/19 to me and that's all I
12 can go by.

13 Q. Okay. Directing your attention to the second
14 entry, the Number 2, could you read that for us?

15 A. Their Toledo and --

16 Q. Bolta?

17 A. And then I have in a circle, arrow to it, is it,
18 looks like Lawrence, Massachusetts plant
19 contaminated their FR with T-55. Therefore he
20 does not want to use their FR drain as originally
21 planned. You want me to read the whole thing?

22 Q. No. That's all. With respect to that, does that
23 help refresh your recollection as to whether the
24 heat transfer fluid in the heat transfer oil
25 system at Toledo was ever contaminated by a mix

1 of FR with T-55?

2 A. Not recollection of. I have to rely a hundred
3 percent on this memo.

4 Q. Now, Exhibit 7 is on a document at least labeled
5 conversion action. Was this document prepared in
6 the ordinary course of Monsanto's business?

7 MR. OCCHIPINTI: Object to form.

8 A. I would expect so.

9 Q. It was prepared by you as part of the --

10 A. It appears that I wrote this, yes, sir.

11 Q. Let me finish the question.

12 A. Excuse me.

13 Q. So we don't have it sort of broken up.

14 A. Okay.

15 Q. Was this document prepared by you as part of the
16 conversion process of whatever plant or facility
17 this involves?

18 A. Yes.

19 Q. And to your knowledge, was Entry Number 2 made by
20 you true and accurate at the time that you made
21 it?

22 MR. OCCHIPINTI: Again, I object.

23 The witness said he doesn't remember making
24 the entry.

25 A. As far as I know.

1 Q. And having sat here and read through that, you
2 have no recollection of that event or those
3 facts, do you?

4 A. Not as a specific in my mind, no, sir.

5 Q. During the conversion process, did your
6 responsibilities involve the review or handling
7 of the sales documents for either the replacement
8 heat transfer oil fluids or original heat
9 transfer oil fluids from Monsanto?

10 A. I'm not sure I follow you.

11 Q. Okay. If someone was making a conversion?

12 A. Yes.

13 Q. And Monsanto was providing the materials for the
14 conversion, since you were overseeing the
15 conversion process, did you have, as part of your
16 responsibilities, did you review or see the sales
17 documentation, invoices?

18 A. I believe I did. Whether I saw all of them, I do
19 not know.

20 Q. Prior to the conversion process taking place,
21 prior to your involvement with the conversion
22 process, did you have, did your responsibilities
23 at Monsanto at all involve heat transfer oil
24 fluids?

25 A. No. You're referring to prior to my assignment

1 to this conversion project. No.

2 - - - -

3 (Thereupon, Gann Exhibit 8, one-page
4 September 18, 1972 Monsanto invoice to
5 Textileather, was marked for purposes of
6 identification.)

7 - - - -

8 (Thereupon, Gann Exhibit 9, one-page
9 April 5, 1982 Monsanto invoice to Textileather,
10 was marked for purposes of identification.)

11 - - - -

12 Q. Handing you, Mr. Gann, documents which have been
13 marked as Exhibits 8 and 9, asking you first of
14 all, if you recognize what those documents are?

15 A. I recognize these as invoices that Monsanto
16 issues on their sales of Therminol.

17 Q. Are these invoices for sales of Therminol 55 to
18 the Toledo facility for General Tire?

19 A. I would interpret these as being sold to General
20 Tire, Toledo.

21 Q. Are these documents, to your knowledge, prepared
22 by Monsanto in the ordinary course of its
23 business?

24 MR. OCCHIPINTI: I'm going to
25 object. This is an inappropriate question

1 for this witness. He said he wasn't
2 involved with the sale of this stuff or
3 involved with heat transfer oil at all prior
4 to this special project.

5 MR. DUCHOWICZ: Well, this is during
6 the special project. The dates I believe
7 will so bear.

8 MR. OCCHIPINTI: Well, you didn't
9 ask him though if he was involved in the
10 sale though during that period.

11 MR. DUCHOWICZ: I've already asked
12 him if during the course of his involvement
13 in the conversion process, if he would
14 receive and review copies of the sales
15 documents for the materials being sold by
16 Monsanto for the conversion.

17 MR. OCCHIPINTI: That's not your
18 question, though. Your question was whether
19 these were prepared in the ordinary course
20 of business; and unless I hear an answer
21 that this witness prepared invoices, that's
22 an inappropriate question for this witness.

23 MR. DUCHOWICZ: I don't think so,
24 but your objection is noted.

25 MR. OCCHIPINTI: But you're wrong.

1 You don't think so. Of course it's an
2 improper question. You're asking him about
3 the preparation of a document. Review and
4 receive is not the same thing, so that's an
5 inappropriate question and I'm not going to
6 allow you to authenticate these invoices
7 through this witness.

8 Q. Fine. Can you answer the question, Mr. Gann?

9 A. Are these typical Monsanto invoices?

10 Q. Yes, are these documents which were prepared in
11 the ordinary course of Monsanto's business?

12 MR. OCCHIPINTI: Same objection.

13 A. I do not know whether they're prepared in the
14 ordinary course. These appear to me to be
15 documents that were used or copies of documents
16 for, that Monsanto would use. I'm not sure I'm
17 answering your question.

18 Q. Well, to your knowledge, did Monsanto prepare
19 documents such as Exhibits 8 and 9 in the
20 ordinary course of its business?

21 MR. OCCHIPINTI: Again same
22 objection. Now you're asking him generally
23 not specifically about these two specific
24 exhibits, but it's the same objection as
25 before, anyway, just noting that

1 difference.

2 A. This is what I recollect as being typical of
3 Monsanto's invoices.

4 Q. You don't specifically recall ever seeing these
5 documents, do you?

6 A. No, not specific.

7 Q. Earlier you indicated, much earlier that there
8 were a couple of different means, I believe, of
9 communicating with customers with respect to the
10 withdrawal of a product from the, withdrawal of
11 FR-1 from the market. Do you recall that general
12 testimony?

13 A. Meetings?

14 Q. No. Various different means?

15 A. Oh, means, excuse me.

16 Q. By which Monsanto communicated with its customers
17 with respect to this withdrawal, correct?

18 A. Yes.

19 MR. OCCHIPINTI: Object to the
20 form. I think he mentioned two.

21 Q. Let me hand you what would be marked as Exhibit
22 10.

23 - - - -

24 (Thereupon, Gann Exhibit 10,
25 one-page May 25, 1972 Paton letter to Dear Sir,

1 was marked for purposes of identification.)

2 - - - -

3 (Thereupon, Gann Exhibit 11, eight
4 pages December 15, 1971 Bergen letter to Dear Sir
5 with attachments, was marked for purposes of
6 identification.)

7 - - - -

8 Q. Mr. Gann, I'm going to first refer to Exhibit 11,
9 if you will.

10 A. Yes.

11 Q. The larger of the two in quantity of pages.

12 First of all, do you recognize what Exhibit
13 11 is?

14 A. It appears to be a notification on Monsanto
15 letterhead that Howard Bergen sent out to
16 Monsanto Therminol FR customers.

17 Q. To your knowledge, when the conversion process --
18 strike that.

19 When the withdrawal of the product, of FR-1
20 from the market was taking place, was Monsanto
21 using a form letter to all of its customers with
22 respect to the decision to withdraw that product?

23 A. I don't know that I have any knowledge of that
24 kind of statement.

25 This letter --

1 Q. Exhibit 11?

2 A. Exhibit 11 is, it appears to me the type of
3 letter, if not the letter that was sent out to
4 all known Monsanto FR customers.

5 Q. To your knowledge, who was Howard Bergen? Strike
6 that.

7 What was Mr. Bergen's role, if any, with
8 respect to the withdrawal of FR-1 from the
9 market?

10 A. I really don't know. I reported to Cumming Paton
11 and my contacts with Mr. Bergen were very
12 infrequent. I think I knew who he was but I
13 don't think I was in, I'm not even sure I was in
14 the meeting with him.

15 MR. OCCHIPINTI: He's got quite a
16 signature, too.

17 A. Oh, I like his signature. I'm impressed with
18 Cumming.

19 Q. To your knowledge, was a copy of Exhibit 11 sent
20 to all Monsanto's customers who had been using
21 FR-1?

22 MR. OCCHIPINTI: I'm going to
23 object.

24 A. I can now recollect something.

25 Q. Please tell us what you recollect.

1 A. Relative to the mailings of this kind of
2 information, I can't say it was to this specific
3 but --

4 MR. CHAMBERS: Let the record show
5 he's referring to Exhibit 11.

6 A. Exhibit 11, referring to Exhibit 11, this is, I
7 recollect mailings going out by either return
8 receipt or registered. There was some logging
9 procedure that we would receive back from the
10 addressee that that had been received.

11 These went out, and I do not recollect the
12 exact post office form that we were using, but it
13 was a form to which we had a registered, I won't
14 say a registered letter because I do not know
15 this, but I do recall, I can recall this: That
16 these letters were sent out in a method that we
17 could track whether or not that person had
18 received the letter.

19 Q. Okay. Going back to Exhibit 11, and I don't want
20 to mischaracterize your testimony. I'm sure
21 Mr. Occhipinti will jump in if I have; or if you
22 recognize it as being inaccurate, please so
23 state, but is it your testimony that you recall
24 that a copy of what has been marked Exhibit 11
25 was sent to all customers of Monsanto who had

1 used FR-1?

2 MR. OCCHIPINTI: I'm going to
3 object, as you anticipated. I'm going to
4 object for several reasons. First of all,
5 the question has been asked and answered.
6 He said it was the type of letter sent. He
7 couldn't say if this was the letter sent.

8 Second of all, I don't know if you've
9 brought this to the witness' attention, that
10 there is an article attached to this letter
11 and you've made it a part of the exhibit so
12 I think you should be clear on that and
13 that's a different question. So are you
14 referring just to the first two pages of it
15 or everything that you've made as one
16 exhibit?

17 Q. Okay. For the purposes of this question,
18 Mr. Gann, I am just referring to the two-page
19 text, the first two pages of Exhibit 11, not
20 what's been attached.

21 A. At the bottom of the second page, it does have
22 the word attachment, but it does not identify
23 what was attached.

24 Q. Right. Back to the original question, is it your
25 recollection that a copy of what has been marked

1 Exhibit 11 was sent to all customers of Monsanto
2 who had used FR-1?

3 A. I cannot recollect this specific letter. I do
4 recollect that this kind of communication, this
5 kind of letter went out to all the customers.

6 Q. When you say this kind of letter, what do you
7 mean?

8 A. Alerting the customer to, now this one here, on
9 Item 11, Exhibit 11, is a formal notification to
10 the customer that Monsanto will no longer sell
11 Therminol FR series of heat transfer and it goes
12 on as to why.

13 I just can't mentally recall that this
14 specific letter was the one that I saw sent out
15 but I know we sent notification letters out.

16 Q. Setting forth the reasons why FR-1 was being
17 withdrawn?

18 A. Yes, sir. That Monsanto was withdrawing it and
19 giving a reason for it.

20 Q. And that reason being the possible -- strike
21 that. That reason being the presence of PCBs in
22 the material?

23 A. Therminol FR series, I'll, let me read this
24 sentence. Therminol FR series of fluids contain
25 polychlorinated biphenyls, PCBs, as we have

1 previously advised you. Previously, I do not
2 know the previously, studies indicate PCBs may be
3 accumulating in the environment, so this is part
4 of the explanation as to why.

5 Q. And that was the explanation which was provided,
6 to your knowledge, to all customers of Monsanto?

7 A. Yes, sir.

8 Q. Directing your attention back to Exhibit Number
9 10, Mr. Cumming Paton's signature.

10 To your knowledge, was a copy, first of all,
11 do you recognize what this document is?

12 A. Yes. I recognize it. I'm not saying I can
13 recall my time in 20 years ago of reading this,
14 but I sure recognize it. And it is alerting the
15 customers after July 1, '72 we will, until
16 further notice, continue to make, to, well, make
17 it available, the incineration service. Up until
18 that time, Monsanto was covering all costs for
19 return and incineration and they're putting our
20 customers on notice that if they haven't
21 converted, that the offer of Monsanto to
22 incinerate at Monsanto's cost was terminated.

23 Q. I'm going to try one, I won't guarantee one last
24 time, but I want to direct your attention to the
25 paragraph marked Number 1 in the center there,

1 Section C?

2 A. Yes.

3 Q. Does that help refresh your recollection as to
4 that particular product, MCS-681?

5 A. No, it doesn't, darn it. It should. It is not
6 there.

7 Q. That's okay. I just noticed it and I figured why
8 not.

9 MR. OCCHIPINTI: You'll be thinking
10 about it for days.

11 Q. You can call somebody up after the deposition.

12 A. This is going to regurgitate and regurgitate.
13 The number now looks very familiar. I'll try to
14 work on the composition of it and I had obviously
15 forgotten all about its existence.

16 - - - -

17 (Thereupon, Gann Exhibit 12,
18 two-page February 24, 1972 Roder letter to Paton,
19 was marked for purposes of identification.)

20 - - - -

21 Q. Mr. Gann, we've handed you what's been marked
22 Exhibit 12 and you've had the opportunity to at
23 least review that document. First of all, I'd
24 like to ask you after you've reviewed it if you
25 recall ever seeing it?

1 A. I do not recall specifically having received this
2 but it has my name on the distribution.

3 MR. OCCHIPINTI: I'm sorry, Exhibit
4 12?

5 A. It's a trip report from Jim Roder.

6 Q. Was it normal practice back in February of '72
7 while this withdrawal was going on, to receive
8 trip reports from people involved directly in the
9 withdrawal?

10 MR. OCCHIPINTI: I'm going to object
11 to the form of the question.

12 A. I believe --

13 MR. DUCHOWICZ: So will I.

14 MR. OCCHIPINTI: Is that a
15 withdrawal of the question?

16 Q. That's a withdrawal of the question.

17 Back in February of '72, was it the custom
18 and practice for you to receive copies of trip
19 reports from people in the field who were
20 involved in the withdrawal of FR-1?

21 A. I believe I received trip reports from the field
22 if the FR issue was involved.

23 Q. And back in that period of time, back in February
24 of '72, were you working on any projects other
25 than the withdrawal of FR-1 from the market?

1 A. No. I was assigned a hundred percent on this one
2 job.

3 Q. Back at that period of time, were you familiar
4 with the different types of circulating pumps
5 which were used in heat transfer oil systems?

6 A. No. No, not specifically.

7 Q. Do you recall ever having any discussions with
8 Mr. Roder with respect to the conversion of FR-1
9 to a different material at the Toledo plant?

10 A. I do, excuse me, I do not recall conversations
11 with Jim. I can't recall any of my conversations
12 with Jim, and we talked a lot.

13 - - - -

14 (Thereupon, Gann Exhibit 13,
15 one-page handwritten notes, was marked for
16 purposes of identification.)

17 - - - -

18 (Thereupon, Gann Exhibit 14,
19 one-page "Status", was marked for purposes of
20 identification.)

21 - - - -

22 (Thereupon, Gann Exhibit 15,
23 four-page September 13, 1972 handwritten notes,
24 was marked for purposes of identification.)

25 - - - -

1 Q. Let's start with Exhibit 13, Mr. Gann.

2 First of all, do you recognize any of the
3 handwriting on Exhibit 13?

4 A. It appears that all of this handwriting could be
5 mine.

6 MR. OCCHIPINTI: Are we talking
7 about 13 now?

8 A. Yes. Number 13.

9 Q. Directing your attention to the lower portion of
10 that under the line --

11 A. Yes, sir.

12 Q. -- which is right below Toledo, Ohio?

13 A. Yes.

14 Q. Could you read that for us?

15 A. Someone reported spill. Good spot, is what it
16 appears to be, Ottawa River, I can't read the
17 next term. Little peninsula caught it in an
18 inlet. That's peculiar, a lousy way of spelling
19 soaked but, I think that says soaked up with, and
20 I recollect seeing someplace else, corn cobs.

21 Coast guard, I can't make out the rest,
22 something about pollution control. Who, looks
23 like, watched over the cleanup.

24 Disposition of corn cobs. General Tire
25 taking care of clean, and I cannot make out the

1 rest of the sentence.

2 Q. Would you take a look at the top portion of the
3 first five lines?

4 A. Yes.

5 Q. Looks like there is a reference there to a seal
6 went out?

7 A. Seal went out. The word looks close to pump. It
8 looks, I interpret this as meaning a pump seal
9 failure.

10 Q. Do you recall being told at all about a pump seal
11 failure at the Toledo plant?

12 A. I can't recall still, I can't recall any
13 conversations.

14 Q. Let's look at Exhibit 14.

15 Do you recognize first of all what that
16 document is?

17 A. This is another form of a customer report that I
18 believe sales people make out. I'm not positive
19 about this.

20 Q. Was this, did you in your job responsibilities
21 involving the withdrawal of FR-1 from the market,
22 did you, did that involve the reviewing or
23 preparation of reports such as Exhibit 14?

24 A. I don't recall preparing this kind of report.

25 Q. Do you recall --

1 A. But I just don't recall.

2 Q. Do you recall if you received this type of
3 report?

4 A. I believe I would receive this kind of report.
5 Whether I received this specific report, I can't
6 recall. It strikes me as a field report.

7 Q. Why is that?

8 A. Because it describes the system and it's got
9 sales history information on it. This is why, it
10 doesn't strike me as a report that I would
11 generate.

12 Q. Do you recognize whose handwriting that is?

13 A. No, I don't.

14 Q. Let's go on to Number 15.

15 Do you recognize first of all what 15 is,
16 Exhibit 15?

17 A. This looks like my handwriting.

18 Q. The entire document or just portions of it?

19 A. Well, let's see. Page 1 looks like my
20 handwriting. Page 2 looks like my handwriting.
21 Page 3 looks like my handwriting. Where in the
22 hell did you find these?

23 Page 4 looks like my handwriting.

24 Q. Okay. Four pages of your handwriting. Okay. Do
25 you recall, do you recognize-- strike that.

1 Do you recall ever preparing --

2 A. I don't recall writing this document.

3 Q. Could you take time and review that document and
4 I'll have a few hopefully quick questions for
5 you.

6 A. Okay.

7 Q. Did you look at all four pages?

8 A. Okay. I've seen it.

9 Q. Does this, having reviewed this document, does
10 that help refresh your recollection as to any
11 leaks of heat transfer fluids at the Toledo site?

12 A. I cannot recollect the occasion or the
13 conversation.

14 Q. Is this a, are these notes from a conversation
15 that you had?

16 A. It appears to me that the nature of my
17 handwriting and the number of pages involved
18 here, it strikes me that this is probably from a
19 conversation, presumably by phone with Bob
20 Ransford.

21 Q. Do you know what Tolex refers to, when it says
22 General Tire Tolex at the top?

23 A. I want to say that's Toledo.

24 MR. OCCHIPINTI: Yes, I do, too.

25 Q. Okay. You're probably right.

1 A. I am the type of person that leaves off letters
2 and verbs and sometimes adjectives in his
3 writing. That is why I had good secretaries to
4 complete that and this is not her writing. This
5 is mine.

6 Q. Does this document at all help refresh your
7 recollection of being informed of any leak of
8 heat transfer fluids in February of '72 at the
9 Toledo plant?

10 MR. OCCHIPINTI: When?

11 MR. DUCHOWICZ: September of '72.

12 MR. OCCHIPINTI: You said something
13 else before.

14 Q. Okay. Let's start all over again. I'll withdraw
15 that.

16 Does this document help refresh your
17 recollection of there, of having been informed of
18 any leak of any heat transfer fluids at the
19 Toledo plant in September of 1972?

20 A. It doesn't help my recollection. I cannot
21 remember the phone call, which I'm assuming this
22 is.

23 Q. This is the normal form that you would have kept
24 notes for phone calls? Is that it?

25 A. This is, I think, typical of, certainly at that

1 period of time, in September, that I would make
2 notes as I had the phone call.

3 Q. Okay. As you sit here today, have you -- strike
4 that.

5 A. I'm impressed that my notes were kept.

6 Q. They must have thought it was important.

7 MR. OCCHIPINTI: I'll ask you about
8 that.

9 A. They didn't throw anything I way, I guess. Gee,
10 I'm surprised.

11 Q. Was this document, were these, was this document
12 accurate at the time that it was prepared by,
13 were the facts supported in this document
14 accurate to the best of your knowledge at the
15 time you prepared it?

16 MR. OCCHIPINTI: Objection.

17 A. To the best of my knowledge, this was what was in
18 my mind or what I heard, what I interpreted as
19 being said.

20 Q. And having reviewed Exhibit 15, you have no
21 recollection as to the facts set forth in Exhibit
22 15 as written by you?

23 A. I do not recall the conversation.

24 - - - -

25 (Thereupon, a discussion was had off

1 the record.)

2 - - - -

3 Q. During the withdrawal of FR-1, were customers
4 supplied with labels to place on material which
5 was being returned to Monsanto?

6 A. Yes.

7 Q. In other words, used FR-1 --

8 A. We sent them labels.

9 - - - -

10 (Thereupon, Gann Exhibit 16,
11 one-page label to Monsanto, was marked for
12 purposes of identification.)

13 - - - -

14 Q. Mr. Gann, handing you what's been marked Exhibit
15 16, I'd ask you if you recognize what that
16 document is?

17 A. The color is different. I don't recognize the
18 color. It's a Xerox, apparently, but this, I
19 could not sit down and draw what the labels
20 looked like. All I know is that we sent them
21 return labels and this could be the, a copy of
22 one of those.

23 Q. So you can't --

24 A. I can't recall that specific of what those labels
25 looked like.

1 Q. To the best of your recollection, directing your
2 attention to the section on Exhibit 16 under the
3 words disposal only, where it says this product
4 contains polychlorinated biphenyls, did the
5 labels which were supplied to customers of
6 Monsanto for the return of FR-1 contain that
7 statement?

8 MR. OCCHIPINTI: I'm sorry. Can I
9 have the question back?

10 - - - -
11 (Thereupon, the requested portion of
12 the record was read by the Notary.)

13 - - - -
14 MR. OCCHIPINTI: Well, didn't he
15 just say this was --

16 MR. DUCHOWICZ: He's already
17 indicated that he cannot specifically say
18 that this is a copy of the particular label
19 which was supplied to customers.

20 MR. OCCHIPINTI: Okay.

21 MR. DUCHOWICZ: I'm asking him
22 whether this particular statement on this
23 thing possibly in some other form, but those
24 words, that statement was on the return that
25 was --

1 MR. OCCHIPINTI: Okay.

2 A. I cannot recall what information was on the
3 label.

4 Q. Do you recall ever seeing drums or containers of
5 virgin FR-1 at Monsanto?

6 MR. OCCHIPINTI: Asked and
7 answered.

8 MR. DUCHOWICZ: I'm talking about
9 the drums. I'm not talking about the fluid
10 itself.

11 MR. OCCHIPINTI: Oh, you're asking
12 about drums?

13 MR. DUCHOWICZ: Right.

14 MR. OCCHIPINTI: Well, then I object
15 to the form, but go ahead.

16 A. Have I seen, can you repeat the question?

17 Q. Okay. Do you recall ever seeing drums of virgin
18 FR-1 while you were at Monsanto?

19 A. I don't believe I have.

20 Q. Do you recall ever seeing the labels, if any,
21 that were on the drums of FR-1?

22 A. Yes.

23 Q. I'm a going to hand you what's to be marked
24 Exhibit 17.

25

- - - -

(Thereupon, Gann Exhibit 17,
one-page Therminol FR-1 label, was marked for
purposes of identification.)

- - - -

Q. Handing you what's been marked Exhibit 17, and
other than possibly the color being different, do
you recognize that document?

A. I do not recognize this, no. I've seen the
label. I do not recall the label.

Q. Were customers of Monsanto -- were you going to
say something?

A. This says waste disposal. I'm not sure this is a
label that was put on.

Q. Exhibit 17?

A. That's right. Okay. This must be -- well, I
remember seeing labels, but I sure can't recall
whether this specific one was a label.

MR. DUCHOWICZ: Okay. I will yield
the floor right now. I may have one or two more,

- - - -

CROSS-EXAMINATION OF PAUL GANN

BY MS. REUSZE:

Q. Mr. Gann, my name is Debra Reusze and I represent
St. Paul in this matter. I have some follow-up
questions that I'd like to begin with.

1 Where did you receive your Bachelor of
2 Science degree from?

3 A. Bachelor of Science in chemical engineering from
4 the University of Michigan, Ann Arbor Michigan,
5 USA. Hopefully going to the Rose Bowl.

6 Q. And I think I'd like to delve a little more
7 deeply into your employment history within
8 Monsanto, if I may.

9 A. Yes.

10 Q. Do you recall the first position that you had or
11 the title you were hired in with?

12 A. I was hired in at Dayton, Ohio as a research
13 engineer in 1947.

14 Q. And can you tell me what types of assignments --

15 A. The very first assignment I had, this is not
16 confidential information, I don't think, was to
17 evaluate the catalyst from the styrene converters
18 of the Texas City plant that was involved in the
19 explosion in 1946, whenever they had the big
20 disaster down there. We were evaluating the
21 catalyst and my first assignment was involved in
22 evaluating the activity whether the catalyst had
23 the activity to do the job.

24 Q. I'm sorry, I'm not sure I understand what you
25 mean by evaluating the activity?

1 A. Okay. To make styrene, you take ethyl benzene
2 and you dehydrogenate the hydrogen from the ethyl
3 group and you do that by having the material go
4 across a catalyst, a metal, a special formulated
5 metal that will cause the dehydrogenation to
6 occur. The yield from the ethyl benzene to the
7 dehydrogenated product at the conditions of
8 operation would indicate whether or not the
9 catalyst was doing its job and that's what I call
10 activity. If it was not doing its job, in other
11 words, if the yield was low, the catalyst would
12 not be very active.

13 If the yield was at expected figures, then
14 the catalyst was probably active.

15 Q. How long did you work on that project?

16 A. Probably a few months.

17 Q. Did you continue to be a research engineer?

18 A. I was a research engineer -- you don't want to
19 hear all the assignments.

20 MR. CHAMBERS: And I guess I would
21 like to interject at this point because, as
22 Mr. Gann has previously testified, his
23 involvement with the products at issue in
24 this case, as I understand it, the Therminol
25 line, was in the period that we've

1 discussed.

2 I don't guess I have any problem if you
3 want to explore in some general terms what
4 his work experience is, but I would prefer
5 that we not take the time to wander through
6 in any detail what he did that didn't have
7 anything to do with PCB products.

8 Q. That would be my goal, to determine essentially
9 what positions or titles you generally held.

10 A. In --

11 MR. CHAMBERS: In a general sense,
12 why don't you just run through them?

13 A. Okay. In Dayton, Ohio, I was basically a
14 research engineer on various kinds of projects.
15 Then I transferred to Springfield, Massachusetts
16 and I was a, oh, we were in a pilot operation,
17 small works operation, making polymer for the
18 Acrinal plant.

19 Q. Excuse me, could you please give me time periods
20 for this, if you recall, to the best of your --

21 A. Yes. Dayton was '47 through '49. Springfield,
22 Massachusetts was from '49 through early '52. I
23 was in, and this was as a engineer making polymer
24 from Acrinal and then from '53, '52, it would be
25 1952 to '68 -- wait a minute. That's wrong. '52

1 to '63, I'm in Decatur, Alabama on various jobs.
2 Who knows what the titles were.

3 Q. That's okay.

4 A. And technical, if you wish, technical liaison
5 between research development in the Acrinal
6 plant. I was quality control manager for the
7 Acrinal plant. I was purchasing agent, these are
8 different periods of time, not simultaneously,
9 purchasing agent doing, if you wish, long-range
10 purchasing primarily with the research
11 development people on products that we were
12 trying to, materials that we might want to use
13 for future materials for the fiber business.

14 From Decatur, I went to New York City which
15 was the headquarters of Chemstrand. Chemstrand,
16 I trust you know is a jointly-owned operation
17 between Monsanto and American Bristol at this
18 point, and in New York, I was, I don't recall the
19 title, I was involved in long-range planning and
20 eventually had a, I guess a manager title on a
21 coordinating effort between research, engineering
22 development and what we call applications
23 research which would be like a tech sales
24 capacity in other organizations. Then I became
25 director of nylon technology.

1 Q. At what time?

2 A. Oh, let's see. In, we were in New York from '73
3 to '78 and therefore this should have been right
4 around '78. And there was a major reorganization
5 and I then was in St. Louis in '68, that same
6 year.

7 MR. CHAMBERS: Let me correct just
8 for a second. I think you may have mistaken
9 and talked about being in New York from '73
10 to '78.

11 A. Yes.

12 MR. CHAMBERS: Would that have been
13 '63 to '68?

14 A. You are correct. '63 to '68. Thank you, sir.

15 MR. CHAMBERS: You're doing real
16 well. Keep going.

17 A. Okay. '63 to '68 in New York. '68 to '73 I'm in
18 St. Louis on various assignments, the first being
19 with the astroturf program. I got involved in
20 quality control efforts there of the product.
21 Then a special task force assignment which I was
22 I guess manager of or something making a product
23 called Chemgrass which was a polyethylene rolled
24 product which you now see as doormats all
25 around. That was in the early development stages

1 of that product.

2 Then I was assigned as a task force manager
3 of the Disney Vican furniture product project
4 which made the plastic furniture for the Disney
5 World down here at Orlando. That was for the
6 rooms, not the restaurants. This was strictly in
7 the guest rooms. I believe I'm still in St.
8 Louis.

9 I believe it was after that that I was
10 pulled into the Therminol conversion or the
11 withdrawal of the Therminol FR products from the
12 market for which these documents were generated.

13 After my assignment there, I was transferred
14 back to a textiles company at my request and they
15 put me in Pensacola, Florida and I took over the
16 library and technical information for Chemstrand
17 worldwide. I retired then in 1981 from
18 Pensacola.

19 Q. Thank you.

20 A. When you type that up, send me a copy and I'll
21 use it as a resume.

22 Q. Mr. Gann, other than your degree from the
23 University of Michigan, do you hold any
24 professional licenses?

25 A. No.

1 Q. Are you familiar with anything at Monsanto called
2 a PCB panel?

3 MR. DUCHOWICZ: You mean like a
4 group of people?

5 MS. REUSZE: I believe that's what
6 it means.

7 A. That exists today or that existed then?

8 Q. I'm not sure. At any point in time?

9 A. I don't recollect that terminology.

10 Q. Do you recognize the name Jay Craddock?

11 A. No. Jay who?

12 Q. Craddock, it's C-r-a-d-d-o-c-k.

13 A. That does not register.

14 Q. Have you ever heard of a company called
15 Metallurgical International, Inc.?

16 A. I don't know. The name doesn't, if my name is
17 associated with it, then obviously I did, but I
18 don't.

19 Q. That's fine.

20 A. Okay.

21 Q. Are you familiar with a company called Aerojet
22 General?

23 A. Aerojet General?

24 Q. Aerojet General?

25 A. I think I've heard the company name. I don't

1 know that I've heard it in respect to my work at
2 Monsanto.

3 Q. During the time period that you were employed as
4 a research engineer with Monsanto in, I'm sorry,
5 was that in Toledo?

6 A. Dayton.

7 Q. In Dayton, do you recall ever technology sharing
8 or technological information shared with General
9 Tire or GenCorp?

10 A. From Dayton?

11 Q. Yes.

12 A. No.

13 Q. Do you recall whether anyone at Monsanto, who was
14 associated with or involved with the conversion
15 project, ever told you that they had visited any
16 of the customers' plants?

17 A. I can't come up with a recollection of specific
18 conversations with specific either marketing tech
19 sales or engineers. I do know that I talked with
20 these people at times after they, before or after
21 they visited a plant, but I can't recall a
22 specific conversation.

23 Q. I'd like to go through a few names of what the
24 documents have indicated are Monsanto employees,
25 and if you would, please tell me whether or not

1 you understood them to be involved in the
2 conversion project.

3 MR. OCCHIPINTI: Just note my
4 objection to the characterization of what
5 the inclusion of a name on some of these
6 exhibits might be. You're assuming that if
7 somebody is cc'd on a letter that it's a
8 Monsanto employee? Is that the premise for
9 your statement?

10 MS. REUSZE: I couldn't say
11 specifically with respect to each of the
12 names. That may be possible.

13 MR. OCCHIPINTI: All right. Well
14 then just note my objection.

15 Q. G.T. Fague, F-a-g-u-e?

16 A. That name is familiar but I don't know why it's
17 familiar.

18 Q. Then I presume you probably would not know
19 whether Mr. Fague is still alive?

20 A. That is true. I'm not sure why the name is
21 familiar.

22 Q. J.R. Fallon, F-a-l-l-o-n.

23 A. Yes. I think I remember him. I think he is a
24 Monsanto or I'm going back to '72, was a Monsanto
25 employee. I think I remember him.

1 Q. Do you believe that you remember him from the
2 conversion project?

3 A. I remember me being involved in the conversion
4 project at that time. I don't think he was
5 involved, I do not recollect that he was involved
6 in the actual conversion project people that I
7 was working with.

8 Q. R.L. Meary, M-e-a-r-y?

9 A. I want to say his name is Dick, but I'm not
10 positive. I think he is an engineer that was on
11 the project conversion team.

12 Q. Would you recall when he was employed by
13 Monsanto?

14 A. I do not know when he was employed with
15 Monsanto. He was a few years, that may be a
16 lie. I think he's a few years younger than I
17 am.

18 Q. Larry, I believe the name may be Russe,
19 R-u-s-s-e.

20 A. That name is familiar. I cannot place him.

21 Q. I believe Mr. Danzer's name has come up with
22 respect to documents?

23 A. Yes, he was an engineer, he was a project
24 engineer on the FR project.

25 Q. Would his name, first name possibly have been

1 Denny Danzer?

2 A. Yes, but I would not come up with Denny until you
3 brought it up.

4 Q. John Mason?

5 A. I should know him but I can't recall. That's
6 terrible.

7 Q. Would you recall a title group director,
8 functional products?

9 A. I don't recall it as a title, but it would be, if
10 that was his title, I probably had very little
11 contact with him.

12 Q. Based upon that title, do you believe that he
13 would have been involved in the conversion at
14 all?

15 A. Organizationally, he probably was; but
16 specifically, because I don't recall really any
17 contact with him, I don't know to what degree you
18 would say a person is involved, like they're
19 president of the company, would he be involved.
20 I have a hard time with that word involvement.

21 Q. That's a tricky one.

22 N.T. Johnson?

23 A. N.T. Johnson. That does not register.

24 Q. Do you recognize the name A.D. Jeffrey?

25 A. No, that does not register.

1 MR. OCCHIPINTI: Note my continuing
2 objection to the suggestion you placed in
3 the record that some of these people, that
4 all of these people are Monsanto's
5 employees.

6 Q. All right. Well, to clarify, I am not
7 representing that Mr. Jeffrey is a Monsanto
8 employee. I do believe that the previously-
9 mentioned names are of Monsanto personnel.

10 A. The ones that I recognize, I recognize them as
11 Monsanto employees. The ones whose names are
12 familiar, I have no idea where, why they're
13 familiar.

14 Q. I don't believe that this question directly has
15 been asked of the witness, but if it has, I am
16 sure someone will let me know.

17 Do you recall ever having contact with
18 someone that you understood to be an employee of
19 General Tire or GenCorp?

20 MR. OCCHIPINTI: Asked and
21 answered.

22 A. I cannot recall specific conversations with
23 anyone from General Tire or with General Tire.
24 Only the documents that I see.

25 Q. Now I'd like to ask you if you would recognize

1 another list of names. I'm not representing
2 these to be employees of any particular company.

3 Doug Bulson?

4 A. Does not register.

5 Q. Frank Sherry?

6 A. Does not register.

7 Q. James Townhill?

8 A. Not familiar.

9 Q. James Weaver?

10 A. James Weaver, no.

11 Q. Frank Tompkins?

12 A. I don't know him.

13 Q. Ken Beckmann?

14 A. Gad, no, those names are not familiar to me.

15 A. I'm not saying I've never met the guys or
16 conversed with them. They just don't register.

17 Q. Fred Eastman.

18 A. Fred Eastman, no.

19 Q. Don Johnson?

20 A. These are common names. No, that doesn't.

21 MR. OCCHIPINTI: Do you watch Miami
22 Vice?

23 A. No. I don't watch much TV.

24 Q. John Crozier?

25 A. No.

1 Q. Jay Millward?

2 A. No.

3 Q. Al Arold, A-r-o-l-d?

4 A. No.

5 Q. During the time that you were employed by
6 Monsanto, did you belong to any professional
7 organizations?

8 A. American Chemical -- I'm sorry. I belonged to
9 the American Chemical Society for a few years.
10 Then I belonged to the American Institute of
11 Chemical Engineers for essentially my entire
12 period with Monsanto. I belong to no
13 organizations now and I belonged to the
14 Association of Purchasing Agents, whatever they
15 used to call themselves, and for a period there
16 was some small groups, I don't know if they would
17 be called professional societies, but I got into
18 purchasing research activities, so that's part of
19 what I was doing in the last assignment in
20 Decatur. There was a group in Texas that we met
21 trying to figure out what cyclohexane pricing was
22 going to do.

23 Q. Did you ever belong to the Chemical Manufacturers
24 Association?

25 A. I don't think I was a member of that.

1 Q. Do you recognize the name, I'm not sure if it's
2 male or female, the last name Kaweck,
3 K-a-w-e-c-k-i?

4 A. That does not register.

5 MS. REUSZE: I believe that I have
6 no further questions for you. Thank you.

7 MR. OCCHIPINTI: Has anything else
8 occurred to you that you want to ask him?

9 MR. DUCHOWICZ: No. Why don't you
10 go ahead?

11 MR. OCCHIPINTI: No, I'll go last.
12 You finish up.

13 MR. DUCHOWICZ: If we finish up, you
14 can't go last.

15 MR. OCCHIPINTI: You noticed the
16 deposition of the witness.

17 MR. DUCHOWICZ: I'm just making a
18 point.

19 - - - -

20 RE-DIRECT EXAMINATION OF PAUL GANN

21 BY MR. DUCHOWICZ:

22 Q. Mr. Gann, directing your attention back to
23 Exhibit 12, there was a question earlier about a
24 Mr. Fague whose name apparently appears at the
25 top of that document on the February 24, '72 memo

1 trip report?

2 A. Okay. 12, got you.

3 Q. You see the 1320 G.F. Fague at the top right-hand
4 corner?

5 A. Yes, that name is familiar.

6 Q. Do you recall who he was or what department he
7 worked in or anything about him at all? Excuse
8 the compound question.

9 A. No. No. The name is very familiar but I cannot
10 place him.

11 Q. Earlier you were handed Exhibit 1 which was a
12 Therminol conversion bulletin.

13 Were you at all involved in the drafting of
14 that bulletin?

15 A. No. No.

16 Q. Who at Monsanto, if you know?

17 A. I do not know who put this together.

18 Q. Were you at all familiar with the contents of
19 that bulletin at the time that you were involved
20 in the withdrawal of --

21 A. Superficially.

22 Q. Not the minute detail of this entry?

23 A. Not in minute detail.

24 MR. DUCHOWICZ: I've not nothing
25 further, unless there is follow-up after Mr.

Occhipinti.

MR. OCCHIPINTI: I have a couple of questions for you.

- - - -

CROSS-EXAMINATION OF PAUL GANN

BY MR. OCCHIPINTI:

Q. I want to ask you about the incineration that Monsanto was offering to its customers.

A. Yes.

Q. And you mentioned before, and I don't want to recharacterize your testimony. It is in the record. There it is what it is, but I think you used the term it was the company's request, it was Monsanto's request that customers return FR-1 and any flushings for incineration, is that accurate?

A. That is accurate relative to the way I interpreted Monsanto's operation.

Q. Okay. Take a look at Exhibit 1, the conversion bulletin which I think you have in the packet before you?

A. Yes.

Q. I'm going to try to find a page reference for you in a second. Take a look at Page 11 of the bulletin?

1 A. All right.

2 Q. You see under subsection A there, fluid flush
3 cleaning?

4 A. Yes.

5 Q. Down at the end of that subsection, I'll just,
6 it's short. I'll read it into the record. "Both
7 the drain Therminol FR and the Therminol 55 or 66
8 used to flush the system may then be returned to
9 Monsanto for disposal"?

10 A. Yes.

11 Q. You don't interpret that as a request, do you?

12 MR. DUCHOWICZ: Objection.

13 A. I interpret that, you want to know how I
14 interpret it?

15 Q. Yes. My question is if you interpret that as a
16 request?

17 A. Well, when you complete this, you may return it
18 to Monsanto. This is next step you do.

19 Q. But you don't interpret that as a request to do
20 it. Is that more like an offer that you'll take
21 it back?

22 MR. DUCHOWICZ: Objection.

23 A. No, I interpret that as a statement of the next
24 step to do.

25 Q. Okay. Let me direct your attention to I think

1 it's Exhibit 4. It's not Exhibit 4. Exhibit 10,
2 which is Mr. Paton's letter dated May 25, 1972?

3 A. Yes.

4 Q. Again, I'm not going to read the whole letter,
5 but I'll read part of the first paragraph picking
6 up with, "at that time, we offered to pay freight
7 costs incurred in returning the Therminol FR to
8 us and costs for proper disposal of the material,
9 (by high temperature incineration.)" It says,
10 "Many companies have taken advantage of this
11 offer."

12 And down at the end of the letter, the last
13 full paragraph, it says, "If you desire this
14 service, please call," and there is a telephone
15 number and an address to write for information.

16 Again, do you interpret this as a request or
17 just another possible next step after the
18 materials are removed from the system?

19 A. I interpret this --

20 MR. DUCHOWICZ: Objection to this
21 person's interpretation of what Mr. Cumming
22 Paton wrote in his letter.

23 Q. Well, that's fair enough; but to you does this
24 represent the type of -- withdrawn. Does this
25 represent a request to you that the material be

1 returned or is this merely an offer that
2 customers may take advantage of?

3 A. A request versus offer. Well, certainly it's an
4 offer. The nature of the fact that Monsanto, my
5 interpretation is that the nature of Monsanto's
6 representation that we are willing to pay these
7 costs, I interpret that as in the framework of a
8 request.

9 Q. Let me ask you this --

10 A. But I am not him.

11 Q. Yes, I understand. I'm not asking you to get
12 into Mr. Paton's mind.

13 A. Okay.

14 Q. I'm just looking for in the exhibits that we have
15 in front of us any type of request that it be
16 returned.

17 As anybody that was in charge of some
18 elements of this conversion project, and that
19 being you, did you ever see a demand that a
20 particular customer return its FR fluid and
21 flushings --

22 A. Demand?

23 MR. DUCHOWICZ: From Monsanto?

24 MR. OCCHIPINTI: Can I finish the
25 question..

1 MR. DUCHOWICZ: I thought you were
2 done. I'm sorry.

3 Q. Mr. Gann, as someone who was involved in this
4 conversion project, did you ever see someone from
5 Monsanto demand that a particular customer return
6 the fluids to them?

7 A. Demand means there is consequences if you don't?

8 Q. Yes. We insist or demand that you return the
9 fluids to us?

10 A. I, the word demand means there is a consequence
11 and I don't recall that there were consequences
12 that Monsanto would lay out on a customer for not
13 returning it. I may not be interpreting your
14 word demand correctly, but that's the way it
15 affects me.

16 Q. Fair enough. I'll ask you another question,
17 then.

18 If a particular customer was going to be
19 involved in a conversion and if Monsanto were to
20 lend technical or other assistance to the
21 customer in the manner you've talked about today,
22 would that assistance by Monsanto be conditioned
23 upon the customer returning the spent fluid and
24 flushings to you?

25 MR. DUCHOWICZ: Objection. Calls

1 for speculation totally.

2 MR. OCCHIPINTI: It's really not
3 speculation. Is he aware of any instance in
4 which that occurred.

5 A. Am I aware of instances where an engineer of ours
6 went out to the customer and came back and the
7 customer did not return the fluid to us?

8 Q. No. Are you aware of any instance in which
9 Monsanto lent technical or other assistance to a
10 customer who was undergoing a conversion where
11 that assistance was conditioned upon the customer
12 returning the spent fluid and the flushings to
13 you?

14 A. No, I am not aware of any modus operandi that way
15 at all.

16 Q. Okay. Now, I think you indicated earlier that
17 Monsanto had an incineration operation somewhere?

18 A. Yes.

19 Q. Where it could take these fluids that were
20 returned and it could incinerate them?

21 A. Yes.

22 Q. Where was that facility?

23 A. Sauget, Illinois.

24 Q. Was that the only incinerator Monsanto had for
25 that purpose?

1 A. That's my understanding.

2 Q. Are you aware of any other incinerators in
3 operation anywhere in the country?

4 A. At that time?

5 Q. During that period of time to be used for that
6 purpose?

7 MR. DUCHOWICZ: Are you referring to
8 Monsanto or anyone?

9 MR. OCCHIPINTI: Anyone.

10 A. There were some other incinerators in the country
11 or being considered for the purpose similar to
12 what Monsanto was doing. I think I had read
13 something like this in Chemical Engineering News
14 or some journal like this. I believe that was a
15 kind of a hot topic at that time.

16 Q. It was under consideration at that time? Is that
17 what you're saying?

18 A. I'm saying it was either under consideration or
19 some were being built somewhere in the country.

20 Q. Did Monsanto ever send FR fluid or flushings from
21 a conversion to any other facility for
22 incineration?

23 A. Not to my knowledge.

24 Q. It used its own facility exclusively?

25 A. My knowledge is they used only their own facility

1 and I do not know that any other facility was in
2 operation at that time.

3 Q. Okay. Let me ask the next exhibit be marked in
4 line.

5 - - - -
6 (Thereupon, Gann Exhibit 18,
7 four-page March 10, 1972 Therminol FR Conversion
8 Project Week of March 7, 1972, was marked for
9 purposes of identification.)

10 - - - -
11 Q. Mr. Gann, would you take a look at Exhibit 18 for
12 a moment and tell me when you're ready?

13 A. Okay.

14 Q. For the record, Exhibit 18 is a March 10, 1972
15 memorandum on the subject of Therminol FR
16 Conversion Project, week of March 7, 1972.

17 Mr. Gann, your name appears at the top of
18 this memorandum and I can't tell from this copy
19 if that's a to you or from you. Do you have any
20 insight on that?

21 A. Well, there is, looking at the last page, the
22 last page has me and therefore, I'm interpreting
23 this that I initiated this document.

24 Q. Okay. And this, is it a fair statement that this
25 is a progress report on the conversion project?

1 A. It appears that this is a summary of progress of
2 that particular week.

3 Q. Before your name on Page 1, the letter B followed
4 by 2 and then the letters SD appears. What's the
5 significance of those numbers and letters?

6 A. That is a mail code within the Monsanto
7 organization at St. Louis.

8 Q. And that followed you everywhere, that code.
9 That was your code?

10 A. No. That's a mail drop code. Billing B, second
11 floor, I don't know where the S and D, but the
12 mailman knows where to drop the mail.

13 Q. So there might be other names with that prefix
14 below or before it?

15 A. Probably.

16 Q. It would be anybody else who worked in the same
17 building as you or the same location?

18 A. Well, probably the same location. I don't know
19 that it went to a specific desk.

20 Q. When you started to get involved in this
21 conversion project, was a file already created
22 for each customer to deposit documents such as
23 the memos we've been looking at and other things
24 that were generated in connection with a
25 particular client's conversion?

1 A. I can't recall the actual set-up that existed
2 when I walked in. They had set up an office, I
3 think they had set up an office for me, file
4 cabinets and then secretarial resource. I don't
5 recall whether there was anything in those file
6 cabinets and if there were, what they were. I
7 don't know whether it was all a hundred percent
8 generated by me or that I inherited stuff. I
9 don't recall.

10 Q. You don't know, then, if files for the purpose of
11 collecting and keeping documents, for example,
12 updates on conversion status of a particular
13 client were created by client or whether there
14 was a master file for all clients?

15 A. I kept a file. I don't recall whether it was the
16 central file for the conversion team. I kept a
17 file and attempted to record and keep all of my
18 notes, as you can tell, in that file and that had
19 to be organized by company by site because I had
20 to be able to get to them; but I don't know if
21 they were a central file, I just don't.

22 Q. In looking at Number 18, for example, Exhibit 18,
23 are there any markings on the top of this exhibit
24 or anywhere in the exhibit which would ensure,
25 for example, that a copy of this was kept in a

1 particular client's file if there was a reference
2 to a particular client in the status report?

3 A. I don't see that this report would be filed by
4 clients and I don't see that a central file is
5 indicated here.

6 Q. Now, I think you indicated earlier that counsel,
7 that is your attorney, provided to you sometime
8 prior to today a set of documents which he may
9 have indicated to you were provided to both sides
10 in this litigation?

11 A. Yes.

12 Q. And I can tell you on the record that those
13 documents were in fact produced to both sides
14 pursuant to a subpoena issued by Mr. Duchowicz to
15 Monsanto.

16 A. Okay.

17 Q. Earlier you made reference to a mechanism which
18 Monsanto placed into effect to try to keep tabs
19 on which companies had received its December 15,
20 1971 letter?

21 A. Yes. -

22 Q. And I think you referred to it as some kind of a
23 backlog or return?

24 A. It was a mailing and it was a return receipt.
25 What I said I didn't know whether it went out by

1 registered mail. I strongly suspect it did
2 because I know it cost so many bucks per mailing
3 and, but it was a return receipt and we kept a
4 log and I may have kept a log. I'm not quite
5 sure at this sitting, but a log was kept of who
6 it was sent out to and then the letters that
7 returned.

8 Q. And during the --

9 A. Or the cards returned.

10 Q. I'm sorry.

11 A. Excuse me.

12 Q. And during the time that you were involved in
13 this conversion project, can you recall getting
14 back the post office's return receipt cards in
15 the mail?

16 A. I can recall seeing the return receipt cards,
17 yes.

18 Q. At the time?

19 A. At the time, yes.

20 Q. In looking through the documents furnished to you
21 prior to the deposition, furnished to you by
22 counsel, your lawyer, did you see either a return
23 receipt card from the United States Post Office
24 or the log that you referred to that you kept?

25 A. No. And, I'm not positive I was the one that

1 kept the log.

2 Q. But you --

3 A. But there was some check-off that we knew and I
4 think it was me, but I can't swear to it.

5 Q. Okay. You made a reference earlier and, again,
6 not repeating your words, I'm not going to try
7 to; but just to orient you, that you were aware
8 of emergency situations where top-up might be
9 required but you didn't know if GenCorp fell into
10 the category of a client that had such
11 circumstances?

12 A. None of the customers that I dealt with flash out
13 to me in this extent and General Tire does not
14 flash out as a specific organization in my mind.

15 Q. Okay. What type of situations were you referring
16 to generally as those in which maybe an emergency
17 where top-up was required? And I think I could
18 probably direct you to an exhibit to help
19 reorient you to what I'm talking about, although
20 maybe I can't.

21 - MR. DUCHOWICZ: Off the record.

22 - - - -

23 (Off the record.)

24 - - - -

25 A. You might refer to Exhibit 4.

1 Q. I am looking at it now and I think this was the
2 one I meant to ask you about.

3 Towards the end of the second paragraph,
4 there is a reference to an emergency top-up with
5 MCS-68.

6 Are you aware, as you sit here today, can
7 you recall any of the circumstances that may have
8 given rise to an emergency top-up?

9 MR. DUCHOWICZ: At the Toledo plant,
10 you're talking about?

11 MR. OCCHIPINTI: Well, right now
12 generally, because he said he couldn't
13 remember any specific customer that had it.

14 MR. DUCHOWICZ: Okay.

15 A. I can't remember specifics. Sorry about that.

16 An emergency would be a major production
17 operation that they couldn't in their point of
18 view shut down and convert right this second and
19 therefore, they needed fluid to continue
20 operation. That would be an emergency, an
21 example of an emergency.

22 Q. Okay. Can you think of any other examples other
23 than that one? I'm not saying that's a bad one
24 or a good one, just are there any others that
25 come to mind?

1 A. No. No. That's a generalized situation.

2 Q. During the conversion process and by that, I mean
3 in between the time when you first notified
4 clients that you were going to withdraw the
5 product FR-1 from the market and the time when
6 any particular client would have actually carried
7 out the conversion, was Monsanto providing some
8 form of heat transfer fluid to clients who had
9 not yet completed a conversion on an emergency
10 top-up basis as you just described?

11 A. Based on these memos here, we had sent them
12 nonPCB fluids, heat transfer fluids for top-off,
13 that they used for top-off. Whether or not we
14 knew it was going to be used for top-off, I'd
15 have to go back and look at the memos. Again, I
16 don't recall specifics.

17 Q. Earlier you identified Mr. Danzer as an
18 individual who was part of the conversion team,
19 is that correct?

20 A. Yes.

21 Q. And you said he was an engineer?

22 A. Yes.

23 Q. Is he the individual who would have --
24 withdrawn.

25 Is he one individual who may have lent

1 technical assistance to clients in connection
2 with their efforts of completing the conversion?

3 A. My interpretation of what he did, yes.

4 Q. Does his name used in connection with either
5 correspondence to a particular client or in notes
6 regarding a particular client's status in the
7 conversion project indicate to you that there was
8 some type of technical assistance being lent to a
9 particular client?

10 MR. DUCHOWICZ: Objection to form.

11 A. I'm not sure how to interpret what you have just
12 asked me.

13 Q. Okay. Let me see if I could help you out there,
14 then.

15 Again with respect to I think it's Exhibit
16 4, the third full paragraph on the first page?

17 A. Mechanical seal problem.

18 Q. "The mechanical seal problem bulletin sent to you
19 on March 17, 1972 by Mr. Danzer may give you
20 leads in solving your current problems." Does
21 that indicate to you that this particular client
22 was having some technical difficulty with respect
23 to a particular conversion?

24 A. Not necessarily with a conversion. He may have
25 had some operating difficulty, pump seals or

1 something of this sort.

2 Q. And would that kind of difficulty affect the
3 completion of a conversion as far as you know?

4 A. I don't know that it would affect the completion
5 of the conversion or the conversion itself.

6 Q. Can you explain what you mean by that?

7 A. I don't know the problem they're talking about
8 here or what was in the, Mr. Ransford's mind at
9 that time, what he was facing, I do not know if
10 that was an operating problem or a conversion
11 problem or that it would affect the conversion.

12 Q. So you don't know whether --

13 A. I can't judge that. I don't have that detail.

14 Q. Sitting here today, you can't tell whether or not
15 an operating problem would have affected the
16 completion of a conversion one way or the other?

17 A. No, I would not know this.

18 Q. If I could ask you to refer to Exhibit 3, if you
19 can take a look at the notes on the progress of
20 conversion initiated by Mr. Danzer, which is the
21 second paragraph on the page?

22 A. Yes.

23 Q. It indicates discussed engineering problems with
24 Ransford and sent, I can't read the next thing,
25 maybe him, info on blank discs?

1 A. I think that is rupture disc.

2 Q. Steam snuff, and there is something else
3 procedures?

4 A. Analytical procedures and mechanical, I think
5 that's analytical procedures and mechanical
6 seals.

7 Q. Let me ask you whether or not the presence of
8 that entry indicates to you sitting here now
9 whether or not there were engineering problems in
10 connection with completing the conversion for
11 this particular client?

12 A. I cannot interpret that as saying that this is a
13 comment reflecting actual conversion or an
14 operational issue. In other words, I don't know
15 that this is related to him actually physically
16 getting ready to convert or whether he was
17 operating the equipment and there were some
18 questions that Danzer could suggest some answers
19 to.

20 Q. FR-1 was the only fire resistant heat transfer
21 fluid on the market during that period of time,
22 isn't that correct?

23 A. I do not know if it was the only one. I don't
24 know, there was a family of PCBs. Some of them
25 went into the heat, I'm sorry, heat transfer.

1 Some into electrical use. Some as plasticizers.
2 I do not know if FR-1 was the only heat transfer
3 fluid, PCB heat transfer fluid.

4 Q. Is it true that the Therminol 55 and Therminol 66
5 products were not fire resistant, were not as
6 fire resistant as the FR-1?

7 A. That is correct.

8 Q. And is it also true that in connection with the
9 conversion of, the conversion project, Monsanto
10 had recommended the installation of steam
11 snuffers to handle the fact or to deal with the
12 fact that the new oil was not as flame resistant
13 as the old material?

14 MR. DUCHOWICZ: Objection. Are we
15 talking about generally or are you asking
16 him specifically with respect to General
17 Tire in Toledo?

18 MR. OCCHIPINTI: I have accepted
19 this witness' representation that he can't
20 remember anything specific about this
21 client.

22 A. That's correct.

23 Q. So I'm asking you generally.

24 A. That's right. That I cannot remember.

25 MR. DUCHOWICZ: All right.

1 A. That specific question, I cannot recall that
2 Monsanto said we recommend the use of snuffers.
3 I would have to look at the conversion bulletin.

4 Q. Okay.

5 A. It makes sense, but I can't say what Monsanto's
6 policy was without -- I do not recollect their
7 policy.

8 Q. Take a look at the conversion bulletin, Page 7.

9 A. That's Item 1, correct.

10 Q. I'll read some of this into the record. "As
11 stated in the introduction to this bulletin," I'm
12 reading under fire resistance now?

13 A. Yes.

14 Q. "The Therminol FR fluids were unique in their
15 inherit fire resistance. No other commonly used
16 heat transfer medium could be so classified."
17 I'm going to skip to the next paragraph now. "It
18 is important to realize that Therminol 55 and 66
19 are less fire resistant than Therminol FR-1 and
20 to modify the heat transfer system accordingly,"
21 and then I'm not going to read it, but it
22 continues.

23 A. Okay.

24 Q. I just wanted to orient to you that section of
25 the bulletin. Having looked at that now, does

1 that help refresh your recollection as to whether
2 or not Monsanto recommended the installation of
3 some type of fire protection measures in the area
4 where the heat transfer oil was going to be used?

5 A. I cannot recall specifically what Monsanto
6 recommended.

7 Q. Okay. And again having looked at that now and
8 listened to me for the past few minutes and
9 looking back at Mr. Danzer's notes in Exhibit 3?

10 A. Yes.

11 Q. Does the inclusion of the reference to a steam
12 snuffer or steam snuffs, at it appears there,
13 indicate to you that there were some engineering
14 or technical problems in completing the
15 conversion?

16 A. It does not indicate to me that there is a
17 technical problem of completing the conversion.
18 This is an advice as to when you go away from the
19 PCBs, you should have, this is a suggestion on
20 how to handle a fire precaution.

21 Q. Okay.- Looking back at Exhibit 18, which is the
22 one that I marked, on Page 3 of that exhibit, at
23 the bottom, under Roman Numeral 2 for activity,
24 Subsection D, this indicates, and I'll read it,
25 "Sauget incinerator expected on stream during

1 the day of March 17th, 1972 after being down most
2 of past five to six weeks. 14,000 gallon storage
3 currently available for tank truck unloading.
4 Railcars on hold until incinerator on stream,
5 reliability okayed and storage tank level
6 sufficiently low."

7 Do you remember the incinerator in Sauget
8 going down for five to six weeks in or around
9 March of 1972?

10 A. I cannot recall that specifically.

11 Q. Would the incinerator being out of operation for
12 a five to six-week period of time have affected
13 the paths by which Monsanto would be able to
14 receive shipments of spent FR and flushings for
15 incineration?

16 A. I do not recall delaying, that being a cause of
17 delay of any conversion. I do recall there was a
18 time that availabilities of the tank cars, there
19 was a logistic problem, but I don't know that it
20 was related to the incinerator being down.

21 Q. Okay. Monsanto had dedicated a railcar to this
22 process?

23 A. More than one railcar.

24 Q. Okay. And if the railcars were on hold until the
25 incinerator were on stream, as this indicates,

1 would that have affected the paths by which
2 Monsanto could receive flushings of FR fluid --

3 A. It depends on --

4 Q. -- for incineration?

5 MR. DUCHOWICZ: You want to ask the
6 question again? I won't object in the
7 middle.

8 Q. Let me repeat the question and you may anticipate
9 the question; but for the benefit of the court
10 reporter, let me finish it. It helps if we don't
11 talk over each other.

12 You indicated that several railcars were
13 dedicated to this process?

14 A. Yes.

15 Q. This exhibits indicates that railcars were placed
16 on hold until incinerator on stream?

17 A. Yes.

18 Q. Do you know if the railcars were placed on hold
19 for five to six weeks while the incinerator was
20 not on stream?

21 A. I have no idea.

22 Q. And if those rails cars were not, well, if they
23 had been placed on hold, would that have affected
24 the paths by which Monsanto could have received
25 FR and flushings for incineration?

1 A. I do not know. I do not know the number of
2 railcars involved in these. The storage tank was
3 low so they could have received material.

4 Q. Up to 14,000 gallons?

5 A. Uh-huh.

6 Q. Is that a yes?

7 A. Just a second. Just a second. I'm reading. I
8 do not know in reading this, whether the 14,000
9 gallon storage currently available for tank truck
10 unloading is related to the term storage tank
11 level sufficiently low. We may be talking about
12 apples and oranges. I do not know.

13 Q. Okay. Have you ever been to the Sauget, is that
14 Sauget, Illinois?

15 A. Yes. I had a little problem initially because I
16 was calling it Saugatuck; but only because I
17 lived in West Point for a while. It's Sauget.

18 Q. Sauget?

19 A. Yes, I've been there.

20 Q. And did you ever have occasion to observe that
21 14,000 gallon storage tank?

22 MR. DUCHOWICZ: Objection.

23 Q. Well, let me withdraw that because that's not
24 what the exhibit says. Let me ask you how were
25 materials slated for incineration stored at that

1 facility?

2 MR. DUCHOWICZ: And we're talking --

3 A. What I recall --

4 MR. DUCHOWICZ: Excuse me. Let me
5 get an objection in. I want to make sure
6 we're talking about the 1972 period because
7 in case he was there after that period, it
8 may have been different.

9 Q. Let me go back. How many times were you there?

10 A. Twice that I recall.

11 Q. Was it during the period of time that you were in
12 charge of this?

13 A. Only during that period of time.

14 Q. During that period of time, then, can you recall
15 the manner in which washings and FR fluid were
16 stored before incineration?

17 A. What I recall seeing was a storage tank, a bunch
18 of drums and railroad cars. That's all I recall
19 seeing, and the incinerators.

20 Q. Sitting here today, can you estimate whether or
21 not this 14,000 gallon reference is to the tank,
22 a storage car, drums or some combination of those
23 three things?

24 A. No. I'd have a hard time today interpreting what
25 that says.

1 Q. Okay. Turn the page, please.

2 Continuing, Subsection 2 now Subdivision E,
3 there is a reference here to, "T-55 availability
4 is in critical short supply."

5 My question is as follows: Since T-55 was
6 used as a flushing agent in the manner you
7 described earlier, would the fact that it was in
8 critical short supply affect your clients' paths
9 of conversion?

10 A. I am not aware, excuse me, I do not recall any
11 delay in conversion due to our inability to
12 supply T-55, but I don't recall a lot of stuff,
13 so.

14 Q. That's okay. Exhibit 17 is a label that
15 Mr. Duchowicz marked?

16 A. Yes.

17 Q. I'm sorry. It's Exhibit 16 I want to draw your
18 attention to.

19 On the bottom left-hand corner of that
20 exhibit, the following words appear: "Extreme
21 care should be taken to prevent any entry into
22 the environment through spills, leakage, use,
23 disposal, vaporization or otherwise."

24 In the lower right-hand corner of this
25 document, the following words appear: "If skin

1 contact occurs, remove by washing with soap and
2 water. Following eye contact, flush with water.
3 If clothing becomes soaked with fluid, launder
4 before wearing again."

5 Do those two statements seem inconsistent to
6 you?

7 MR. DUCHOWICZ: Objection.

8 A. It depends whether you're dealing in parts per
9 trillion or gallons per hour. They do not strike
10 me as inconsistent from the standpoint of one,
11 the bulk material and second, human safety.

12 Q. I see. When you make reference to parts per
13 billion or parts per million --

14 A. Whatever.

15 MR. DUCHOWICZ: Parts per trillion.

16 A. I just wanted to round it off. I don't know that
17 we can analyze to trillion.

18 Q. When you say you don't think these two things are
19 inconsistent, are you saying that because the
20 items referenced on the right-hand side of the
21 exhibit encompass some kind of mixing with water
22 or soap and other materials, that may have
23 diluted the PCB content?

24 A. No. I make, this is a judgment on my part. One,
25 is the safety aspect of the human being and if

1 you get this on you, what they're recommending is
2 get the material off your skin as quickly as
3 possible. If it's on your clothes, they're
4 basically saying, you know, get the damn clothes
5 off from you and go wash them.

6 Q. And the primary concern being safety to human
7 health?

8 A. Yes, to the human being, yes. The only thing in
9 this world that counts.

10 Q. I agree with you.

11 Take a look at Number 17 now.

12 A. Yes.

13 Q. Can you date this document?

14 A. No. No. I can't date it. It appears this would
15 be a label that was used during the conversion
16 program, but I cannot mentally recall this
17 specific document.

18 Q. Was Monsanto selling Therminol FR-1 heat transfer
19 medium during the conversion process?

20 A. To my recollection, I am not aware of Monsanto
21 selling it. I'm sure not aware of me saying
22 anything other than not available.

23 Q. By that, do you mean it was still being produced
24 by the company but they were not making it
25 available to customers?

1 A. We still may have had some on hand. I do not
2 recall the timing of production shutdown.

3 Q. Do you know why a label like this would be
4 prepared by the company and what if anything it
5 would be affixed to?

6 MR. DUCHOWICZ: Objection. No
7 foundation.

8 MR. OCCHIPINTI: Well, I asked him
9 if he knew.

10 A. I only can speculate.

11 Q. I don't want you to speculate.

12 A. Okay. I just don't recall how things were
13 specifically labeled, whether this label went on
14 to a drum, whether it went, you know, what kind
15 of container.

16 Q. I see.

17 A. Well, it's obviously a drum, this is for a
18 55-gallon drum and this appears to be a label
19 that would be used on virgin Therminol. Whether
20 it was used during the time of conversion or
21 before the time of conversion, I have no idea.

22 Q. Okay. On this exhibit, there is a reference to
23 waste disposal and there is a, I don't want to
24 call it an offer or a request, but the following
25 words appear: "Used polychlorinated biphenyl

1 fluids may be returned freight prepaid for proper
2 incineration at the rate of 3 cents per pound"?

3 A. Yes.

4 Q. Did Monsanto offer to accept used PCB fluids for
5 proper incineration at 3 cents per pound at any
6 time other than during the conversion?

7 A. I'm only aware of during the conversion.

8 Q. Okay. Take a look at Gann 11.

9 A. Okay.

10 Q. There is an article attached to this letter on my
11 copy. I would suspect your copy has the same?

12 A. Exactly.

13 Q. This is an article entitled "PCBs prevalent and
14 persistent." It's authored by Carl J. Gustafson,
15 and if I'm not mistaken --

16 MR. DUCHOWICZ: Excuse me.

17 A. Published in the Environmental Science &
18 Technology, apparently, based on the statement
19 right at the bottom.

20 Q. There is a date that appears on every other page
21 of this article, if I'm not mistaken. Is that
22 October, 1970?

23 A. That's what it says.

24 Q. And forgive me if you were asked this, I cannot
25 remember and in fact I think I instigated some

1 discussion about this but I don't remember what
2 they decided. Do you know if this article was
3 attached to this letter when sent to any
4 particular customer?

5 A. I believe it was attached. The letter says
6 attachment.

7 Q. Okay. In between October, 1970 and December 15,
8 1971, which is the date of the cover letter, do
9 you know if Monsanto was selling Therminol FR-1?

10 A. I do not know.

11 Q. Okay. Let me go back and ask you one more
12 question about Gann 11 and Gann 17.

13 A. Yes.

14 Q. Does the inclusion of the language quote, "This
15 product contains polychlorinated biphenyls which
16 some studies have shown may be persistent," and
17 then it continues, suggest to you that this label
18 was prepared sometime after October, 1970 when
19 this article was --

20 A. It suggests to me, yes, I interpreted it that
21 way. -

22 Q. -- published?

23 A. Yes. But I don't know when this label was made.

24 Q. Incidentally at the bottom of the label there are
25 some numbers, 811.01-245.11/53.

1 Does that aid in any way in your estimating
2 when this document was prepared?

3 A. No. I suspect, speculation, that there is a code
4 system on Monsanto labeling.

5 Q. You don't know that for sure, do you?

6 MR. CHAMBERS: Don't guess.

7 Q. I don't want you to speculate or guess.

8 A. Okay. I have no idea.

9 Q. And now finally, if I can find one more exhibit
10 to ask you about. I know you indicated earlier
11 that the arrow on some of the exhibits where your
12 name was included was someone's attempt at
13 routing the exhibit to you. On two of the
14 exhibits, Gann 12 and Gann 5, your name is
15 crossed out, on 12 it's crossed out. On 5 your
16 initials are crossed out.

17 First of all, does the fact that the
18 initials on 5 and the name on 12 are crossed out
19 have any particular significance to you?

20 A. No.

21 Q. Does that suggest to you that maybe someone
22 decided not to route it to you?

23 A. It does not suggest it to me. I'm just wondering
24 whether I'd cross -- no, I don't know why that
25 is.

1 Q. But it wasn't your practice to cross off your
2 name once you had received something like this,
3 either of these exhibits, would it have been?

4 A. No, I don't think it was my practice.

5 Q. At the bottom of 12, there is some handwritten
6 notes?

7 A. Yes.

8 Q. Followed by what appears to be DED and a date?

9 A. Yes.

10 Q. Do you know what DED stands for?

11 A. I assume, I'm sorry, I guess those are the
12 initials of Danzer.

13 Q. Okay.

14 A. I don't know what his middle initial is.

15 Q. Do you recognize the handwriting?

16 A. His handwriting, that's not my handwriting.

17 Q. You don't recognize the handwriting on this?

18 A. No, I don't recognize the handwriting.

19 MR. OCCHIPINTI: Thank you very
20 much, Mr. Gann, I have no further
21 questions.

22 - - - -

23 REDIRECT EXAMINATION OF PAUL GANN

24 BY MR. DUCHOWICZ:

25 Q. Mr. Gann, back to Exhibit 18, the one Mr.

1 Occhipinti provided to you earlier, reference on
2 the third page of that document under Roman
3 Numeral 2C, it says, "Effective March 7th, '72, a
4 Xerox copy of the Wall Street Journal, March 16,
5 1972 article on FDA's proposal for PCB limitation
6 in the food industry is enclosed in all initial
7 team letters to customers."

8 Do you see that?

9 A. Yes.

10 MR. DUCHOWICZ: Would you mark this
11 Number 19?

12 - - - -

13 (Thereupon, Gann Exhibit 19,
14 one-page Monday, March 6, 1972 photocopy of an
15 article from the The Wall Street Journal, was
16 marked for purposes of identification.)

17 - - - -

18 Q. Handing you what's been marked as Exhibit 19, is
19 Exhibit 19 a copy of the article from The Wall
20 Street Journal which was, according to Exhibit
21 18, enclosed in all initial team letters to
22 customers?

23 A. I have, my recollection cannot put that
24 together.

25 Q. You cannot?

1 A. I can't say that this was the specific article
2 that was used.

3 Q. Directing your attention to the date on that
4 article, does that at all help refresh your
5 recollection as to --

6 A. No.

7 Q. -- whether that was the article?

8 A. I would think it would be the article but I don't
9 recollect specifically the article. Until you
10 showed me this, I had forgotten all about the
11 existence of the article; but, no, this doesn't,
12 I can't put that together.

13 MR. OCCHIPINTI: Okay. That's all I
14 have.

15 MR. OCCHIPINTI: One last question.

16 - - - -

17 RECROSS CROSS-EXAMINATION OF PAUL GANN

18 BY MR. OCCHIPINTI:

19 Q. If an initial team letter to customers had been
20 already initiated or sent, would there have been
21 any effort to send this as a follow-up letter to
22 customers? This being the March 6, 1972
23 article?

24 A. In my correspondence with customers, I recall
25 clipping many things to my letters to aid them in

1 understanding the issue. I would have expected
2 me to have included this article in much of my
3 correspondence where appropriate. I hung on to
4 this kind of material for that.

5 Q. For that purpose?

6 A. For that purpose, to keep them aware; but, again,
7 specifically I can recall putting some packages
8 together on a certain mailing but I don't know to
9 whom or anything like that.

10 Q. Is it a fair statement that if any information
11 existed which would have motivated Monsanto to
12 withdraw the product from the market, it would
13 have been included in the December 15, 1971
14 letter to customers?

15 A. Run that by once more.

16 Q. Sure. Is it a fair statement that if any
17 information existed that Monsanto was aware of
18 that had motivated it to withdraw the product
19 from the market, it would have been included in
20 this December 15, 1971 letter?

21 A. Well, there may have been more information than
22 just that. I don't know what information was
23 available at the time they sent this out.

24 Q. I'm not talking about information that's
25 available outside of the company. I'm just

1 talking about the motivation for Monsanto's
2 withdrawal. I think you said earlier that you
3 wanted to explain to customers the reason for the
4 withdrawal?

5 A. Right.

6 Q. Is it a fair statement that everything Monsanto
7 knew about PCBs which had motivated it to
8 withdraw the product from the market was
9 contained in this letter or the attachment?

10 A. I have no way of judging that.

11 MR. OCCHIPINTI: Okay. Thank you
12 very much for your time, sir. I appreciate
13 it.

14 MR. DUCHOWICZ: We're done. Thank
15 you very much. I'm sure your attorney has
16 explained signature to you.

17 MR. CHAMBERS: Actually, I haven't,
18 but we will want to read and sign.

19
20 PAUL GANN
21
22
23
24
25

C E R T I F I C A T E

The State of Ohio,) SS:
County of Cuyahoga.)

I, Pamela S. Greenfield, a Notary Public within and for the State of Ohio, authorized to administer oaths and to take and certify depositions, do hereby certify that the above-named PAUL GANN, was by me, before the giving of his deposition, first duly sworn to testify the truth, the whole truth, and nothing but the truth; that the deposition as above-set forth was reduced to writing by me by means of stenotypy, and was later transcribed into typewriting under my direction; that this is a true record of the testimony given by the witness, and was subscribed by said witness in my presence; that said deposition was taken at the aforementioned time, date and place, pursuant to notice or stipulations of counsel; that I am not a relative or employee or attorney of any of the parties, or a relative or employee of such attorney or financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office, at Cleveland, Ohio, this ____ day of _____, A.D. 19 ____.

Pamela Greenfield, Notary Public, State of Ohio
1750 Midland Building, Cleveland, Ohio 44115
My commission expires June 30, 1993

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E X H I B I T I N D E X

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1 Gann Exhibit 18
2 four-page March 10, 1972
3 Therminol FR Conversion Project
4 Week of March 7, 1972 125

5 Gann Exhibit 19
6 one-page Monday, March 6, 1972
7 photocopy of an article from the
8 The Wall Street Journal 151

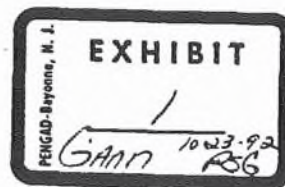
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T E C H N I C A L B U L L E T I N

**THERMINOL®
CONVERSION
BULLETIN**

SP/TC-1

Monsanto



GEN 000107

THERMINOL® CONVERSION BULLETIN

SP/TC-1

"Nothing contained herein is to be construed as a recommendation to use any product in conflict with any patent. MONSANTO MAKES NO WARRANTIES AS TO THE FITNESS OR MERCHANTABILITY OF ANY PRODUCT REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations, and disclaims all liability for any resulting loss or damage."

Monsanto Industrial Chemicals Co.
A Unit of Monsanto Company
800 N. Lindbergh Blvd., St. Louis, Mo. 63166

GEN 000108

INTRODUCTION

Therminol FR® fire-resistant heat transfer fluids have long provided safe, dependable, economical performance for hundreds of users in dozens of applications. The presence of poly-chlorinated biphenyl (PCB) in the Therminol FR formulation provided fire-resistance, giving Therminol FR an added margin of safety which was especially desirable in hazardous applications.

Most recently, PCB has been identified as a potential hazard to the environment. Monsanto has accordingly elected to discontinue the manufacture and sale of Therminol FR fluids for heat transfer applications. This bulletin is to inform you about two alternative products sold by Monsanto which do not contain PCB, namely Therminol 55 and Therminol 66.

These products offer most of the excellent heat transfer characteristics of Therminol FR fluids, and even a few additional advantages, such as a lower specific gravity for improved pumpability requiring less horsepower. We would point out that Therminol 55 and 66 are not *fire-resistant* to the extent the Therminol FR fluids were, and due consideration must be given this fact in converting to these newer Therminol fluids. You may wish to consult with your insurers on any conversion from Therminol FR.

Conversion from a Therminol FR fluid to a Therminol 55 or 66 fluid will be a relatively simple, low-cost procedure in the majority of cases. Incorporation of proper fire protection equipment will be the only consideration of major consequence in most cases. But even this modification becomes academic, for with the discontinuation of Therminol FR fluids, fire protection equipment becomes necessary for any and all low pressure heat transfer media available today, since the Therminol FR fluids were unique in their fire-resistance.

Should questions arise with respect to the conversion from Therminol FR fluid, Monsanto's Specialty Products Group invites you to call upon its staff or qualified systems engineers for consultation at any time. Call . . .

(314) 694-2514

and ask for a Monsanto Heat Transfer Specialist.

GEN 000109

Therminol 55 and 66 and Your Heat Transfer System

Table 1 shows the typical physical, chemical and thermal properties of Therminol FR-1, Therminol 55 and Therminol 66. As you will note, Therminol 55 and 66 are quite similar except with regard to AIT, Fire Point and density. The substantially lower density of Therminol 55 and 66 means that pumps used in a Therminol FR-1 system should be adequate for a Therminol 55 and 66 system. In most cases, pumping rates will be increased with a resultant saving in horsepower requirements.

TABLE 1
TYPICAL PHYSICAL, CHEMICAL & THERMAL PROPERTIES

	Therminol FR-1	Therminol 66	Therminol 55
Composition	Polychlorinated Biphenyl	Modified Terphenyl	Alkylated Aromatic
Maximum Bulk Temperature Rating (°F.)	600°F.	650°F.	600°F.
Recommended Use Range (°F.)	45 — 575°F.	45 — 635°F.	20 — 575°F.
Pour Point (°F.)	2	-15	-40
Pounds/Gallon (75°F.)	11.55	8.35	7.4
Flash Point (°F.)	350	355	355
Fire Point (°F.)	None to Boiling	374 — 392	410
AIT (°F.)	1206°F.	705	670
Boiling Range (°F.)	620 — 680	644 — 745	635 — 734
Molecular Weight	265	240	340
Expansion Coefficient cc/cc/°F.	0.00031	0.00039	0.00047

Therminol 55 and 66 have outstanding heat transfer properties, so heating and cooling performance will not be sacrificed in a change from Therminol FR-1. The specific heat and thermal conductivity of Therminol 55 and 66 are shown, along with other physical properties, in Tables 2, 3 and 4, and in Figures 1, 2 and 3. The lower pour points of Therminol 55 and 66 will provide easier cold startup of the system.

GEN 000110

TABLE 2
THERMINOL® FR-1
VARIATION OF PROPERTIES WITH TEMPERATURE

Temperature		Density		Specific Heat		Thermal Conductivity		Viscosity		Vapor Pressure	
°F	°C	lb/gal	Kg/m ³	BTU/lb °F	Kcal/Kg °C	BTU/ft hr °F	Kcal/m hr °C	Cp	Cs	mmHg absolute	Kg/cm ²
50	10	11.68	1399.6	0.272	0.272	0.06098	0.0907	308	220	—	—
100	38	11.46	1372.7	0.282	0.282	0.06060	0.0902	23.2	16.9	—	—
150	66	11.22	1343.7	0.291	0.291	0.06021	0.0896	6.6	4.9	—	—
200	93	10.99	1316.7	0.3047	0.3047	0.05976	0.0889	3.4	2.6	—	—
250	121	10.76	1289.1	0.3151	0.3151	0.05927	0.0882	2.3	1.8	—	—
300	149	10.53	1261.3	0.3255	0.3255	0.05875	0.0874	1.4	1.1	—	—
350	177	10.30	1233.5	0.3359	0.3359	0.05819	0.0866	1.0	0.8	10	0.0136
400	204	10.07	1205.8	0.3464	0.3464	0.05760	0.0857	0.8	0.7	27	0.0367
450	232	9.83	1178.0	0.3568	0.3568	0.05697	0.0848	0.6	0.5	65	0.0884
500	260	9.60	1150.2	0.3672	0.3672	0.05630	0.0838	0.5	0.4	143	0.1945
550	288	9.37	1122.5	0.3776	0.3776	0.05560	0.0827	0.4	0.4	291	0.3958
600	316	9.14	1094.7	0.3880	0.3880	0.05487	0.0817	0.4	0.3	550	0.7480
650	343	8.91	1066.9	0.3985	0.3985	0.05409	0.0805	0.3	0.3	18.8psia	1.3218
700	371	8.68	1039.3	0.4089	0.4089	0.05329	0.0793	0.3	0.3	31.9psia	2.2429

TABLE 3
THERMINOL® 66
VARIATION OF PROPERTIES WITH TEMPERATURE

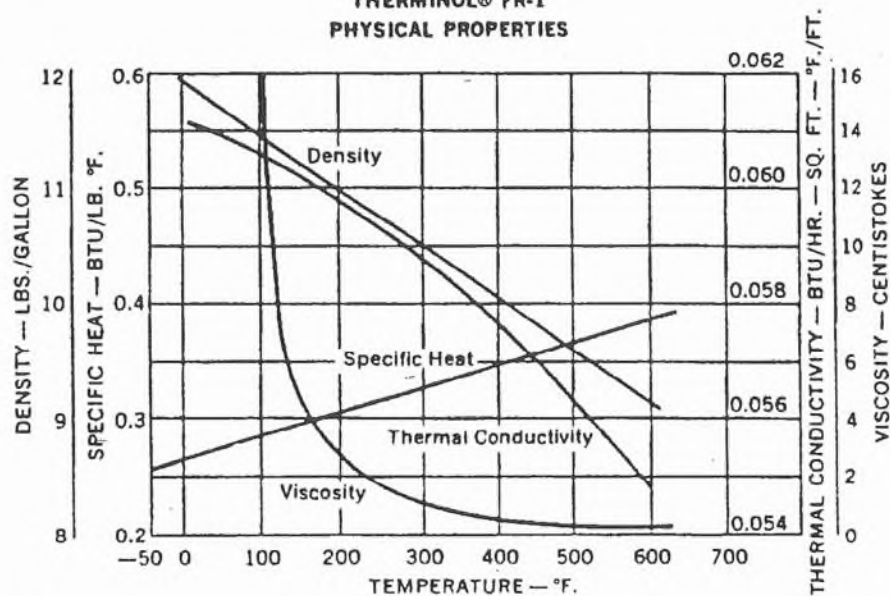
Temperature		Density		Specific Heat		Thermal Conductivity		Viscosity		Vapor Pressure	
°F	°C	lb/gal	Kg/m ³	BTU/lb °F	Kcal/Kg °C	BTU/ft hr °F	Kcal/m hr °C	Cp	Cs	mmHg absolute	Kg/cm ²
0		8.67	1040	0.320	0.320	0.0720	0.1072	62000	50000	—	—
50	10	8.51	1020	0.350	0.350	0.0711	0.1058	255	250	—	—
100	38	8.34	1000	0.380	0.380	0.0703	0.1046	28.0	28.0	—	—
150	66	8.14	975	0.405	0.405	0.0695	0.1034	9.75	10.0	—	—
200	93	7.91	950	0.430	0.430	0.0687	0.1022	4.18	4.40	0.1	—
250	121	7.77	930	0.455	0.455	0.0678	0.1008	2.42	2.60	—	—
300	149	7.59	910	0.480	0.480	0.0670	0.0997	1.55	1.70	2.0	0.003
350	177	7.39	885	0.505	0.505	0.0662	0.0985	1.06	1.20	—	—
400	204	7.17	860	0.530	0.530	0.0653	0.0972	0.77	0.90	20.0	0.027
450	232	7.04	840	0.555	0.555	0.0645	0.0959	0.58	0.69	50.0	0.068
500	260	6.75	810	0.580	0.580	0.0637	0.0948	0.45	0.55	100.0	0.136
550	288	6.62	793	0.605	0.605	0.0628	0.0935	0.36	0.46	200.0	0.272
600	316	6.42	770	0.630	0.630	0.0620	0.0923	0.34	0.44	350.0	0.476
650	343	6.24	750	0.655	0.655	0.0613	0.0912	0.27	0.36	760.0	1.034
700	371	6.09	730	0.680	0.680	0.0605	0.0900	0.20	0.28	1000	1.360

GEN 000111

TABLE 4
THERMINOL® 66
VARIATION OF PROPERTIES WITH TEMPERATURE

Temperature		Density		Specific Heat		Thermal Conductivity		Viscosity		Vapor Pressure	
°F	°C	lb/gal	Kg/m ³	BTU/lb °F	Kcal/Kg °C	BTU/ft hr °F	Kcal/m hr °C	Cp	Cs	mmHg absolute	Kg/cm ²
0	-18	7.62	915	0.420	0.420	0.0813	0.1210	1472	1610	—	—
100	38	7.31	878	0.472	0.472	0.0784	0.1167	25.4	30.1	0.5	0.001
200	93	7.00	840	0.522	0.522	0.0753	0.1121	4.20	5.0	3.0	0.004
300	149	6.69	803	0.572	0.572	0.0724	0.1077	1.69	2.10	10	0.014
400	204	6.39	766	0.620	0.620	0.0692	0.1030	0.904	1.18	40	0.054
500	260	6.07	729	0.670	0.670	0.0661	0.0984	0.583	0.80	100	0.136
600	316	5.76	691	0.718	0.718	0.0630	0.0938	0.415	0.60	250	0.330

FIGURE 1
THERMINOL® FR-1
PHYSICAL PROPERTIES



GEN 000112

FIGURE 2
THERMINOL® 66
PHYSICAL PROPERTIES

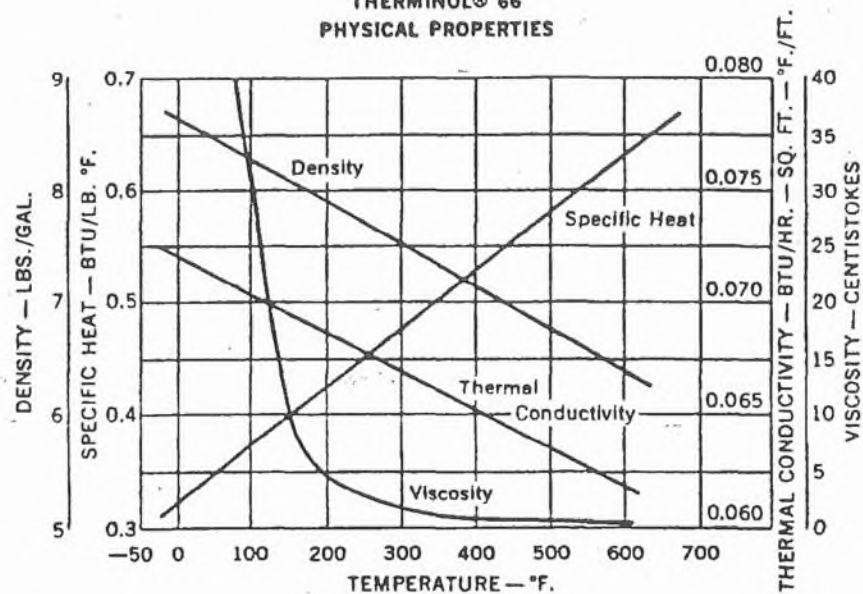
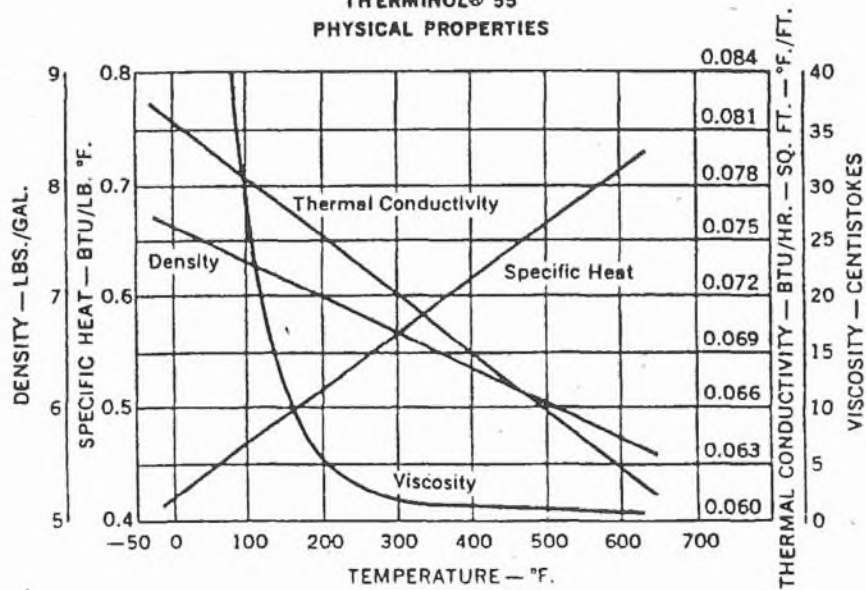


FIGURE 3
THERMINOL® 55
PHYSICAL PROPERTIES



GEN 000113

Generally speaking, then, a well designed system currently operating on Therminol FR-1 can be converted to Therminol 55 and 66 with few, if any, basic changes in design — and without sacrifice to heat transfer efficiency. With the similarity of the heat transfer properties of the three fluids thus established, let us turn to the important differences between Therminol FR-1 and Therminol 55 and 66: namely, *fire-resistance* and *oxidation-resistance*.

Fire-Resistance

As stated in the Introduction to this bulletin, the Therminol FR fluids were unique in their inherent fire-resistance. No other commonly used heat transfer medium could be so classified. Even so, the Therminol FR fluids could be made to burn under certain conditions, as indicated by their AIT of about 1200°F.

It is important to realize that Therminol 55 and 66 are less fire-resistant than Therminol FR-1, and to modify the heat transfer system accordingly; it is equally important to understand that Therminol 55 and 66 are *not* volatile, highly flammable fluids, but rather combustible as defined by FM and NFPA (NFPA No. 321).

Protecting the System

There are two major fire protection considerations in changing to Therminol 55 or 66 — *system leakage* and possible *tube rupture* (in the heater). The former is actually part of the larger subject of good system maintenance, and should be considered *regardless* of the heat transfer medium employed. A tight, well-maintained system is usually a good, safe system! Following are some suggestions to prevent leakage when you convert to Therminol 55 or 66.

First, if your system has rotary mechanical seals, you should provide a spray shield and a drip pan with a drain to a collection sump. Canned and seal-less pumps offer excellent protection against leakage.

The best way to prevent piping leakage is to weld all connections. Where you must have access, use raised-face flanges with appropriate gasketing and high-temperature bolting. Control of piping leaks is especially important, since fluid-soaked insulation poses a more serious hazard than the leaking fluid, itself.

Organic compounds such as Therminol 55 and 66 exhibit a slow oxidation reaction with the air trapped inside the voids of the insulating material when system temperatures reach about 500°F. Saturated insulation offers a large fuel surface in the face of poor heat dissipation conditions, and this, along with possible catalysis from the insulating material (magnesia, silicate-bonded asbestos or calcium silicate) can cause a temperature build-up in the mass. This temperature build-up can result in ignition of the fluid when the space between the piping and the saturated insulation is exposed to air (i.e., should the insulation be broken for repair, etc.).

This phenomenon is not fully understood, but appears to occur less with closed cell insulation than with the insulating materials mentioned

GEN 000114

above. Closed cell materials, then, are preferred, especially where leakage is a possibility despite all precautions.

The principle problem areas are near instrument connections, valve packing glands, flanges, and where cracks develop in relatively impermeable insulation cement adjacent to oil soaked insulation.

To obviate this problem, eliminate any source of leakage promptly. Replace leaky gaskets, oil soaked insulation, and re-pack valve stems. Cover insulation where leaks might occur with a hydraulic setting, oil-resistant cement. Install valves, where possible, with the stems in a horizontal position so that leaks will drip *away* from the insulation. And again, use closed cell insulating materials on suspect piping areas.

Tube Rupture in Fired Heaters

Generally speaking, where fire protection is concerned, it is best to consult your insurance underwriter for guidance and counsel. Likewise, you will want to discuss your fire safety equipment requirements with qualified suppliers of fire protection equipment. Selection and sizing of fire protection equipment is important to safeguard the installation.

A commonly used method of preventing fire in the event of tube rupture in fired heaters is piping steam or CO₂ as a snuffer into the combustion chamber of the heater. Usually a properly-sized line with a *remote* manual valve for activation is the preferred arrangement. This snuffer system could be automated by the use of an exhaust stack temperature switch. This switch would then energize a solenoid valve and alarm upon excessive temperature rise, automatically flooding the chamber with a fire extinguishing agent.

In practice the temperature switch is often set about 100°F. *over* the normal exhaust temperature to prevent nuisance shutdowns. Where steam snuffer systems are used, it is a good idea to employ a steam trap to avoid slugging the combustion chamber with water when the system activates, or is activated manually.

You can obtain a basic guideline in the selection of CO₂ protection equipment (again, it is best to consult your insurance underwriter) from the National Fire Protection Assn., 60 Batterymarch Street, Boston, Mass. 02110 AC 617-482-8755. NFPA Bulletin No. 12 dated 1968 should be requested. This bulletin should be helpful in determining the amount of CO₂ and the concentration of CO₂ needed to extinguish a fire based on your specific application.

CO₂ cylinders are available from Cardox Division of Chemetron, Chicago, Ill. as well as other suppliers. Some standard sizes are 50, 75, 100 and 150 pound cylinders. Prices usually include drawings of the units, fully charged cylinders, flexible piping connectors, spray nozzle, pressure switch, alarm and automatic control, *provided CO₂ release signal is supplied by customer device*. Piping, wiring, and installation labor to be provided by the customer. Recharging of spent cylinders is available at an additional cost from a variety of "Fire & Safety Equipment Suppliers" listed in the Yellow Pages of your phone book.

GEN 000115

Selection of all equipment and installation recommendations should be obtained from qualified suppliers; however, it is important to insure that sufficient CO_2 is available to prevent re-ignition while the heater is cooling.

The Halon Fire Suppression System is a possible alternative to a CO_2 arrangement because it can be used in closed spaces with personnel in the area. One supplier of Halon systems is the Cardox Division of Chemetron Corporation, Chicago, Ill. 60611.

Again, we strongly recommend that the advice of fire protection companies be solicited in either case to insure proper equipment selection and installation.

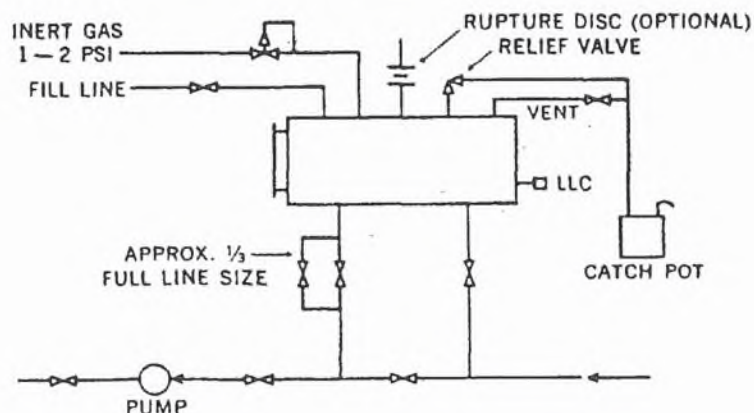
If steam is to be used rather than the other alternatives suggested above, please refer to the NFPA Volume I, Section 86A (1970-1971) to obtain the volume of steam required.

Oxidation-Resistance

With a Therminol 55 or 66 system, some provision should be made to prevent oxidation caused by air contact at fluid temperatures exceeding 200°F . This was not the case with Therminol FR fluids, but must be observed for Therminol 55 and Therminol 66. Oxidation can result in sludge formation, eventually leading to carbonaceous deposits on heat transfer surfaces and at mechanical seal faces.

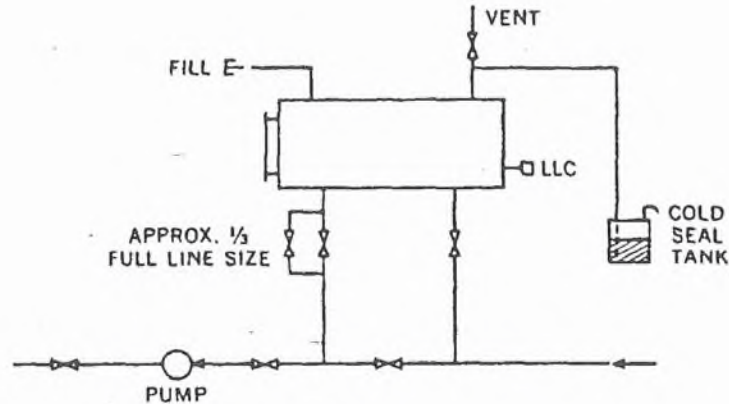
Oxidation of fluid can develop by air contact in an open, vented expansion tank. Therefore, we recommended that the expansion tank be blanketed with an inert gas (such as nitrogen) as shown in Figure 4. If this is not possible, air contact can be minimized by a cold seal arrangement as shown in Figure 5. An inert gas pressure of one to two psi is adequate, as Therminol 55 and 66 do not require pressurization to maintain liquid phase.

FIGURE 4
SUGGESTED INERT GAS ARRANGEMENT
FOR EXPANSION TANK



GEN 000116

FIGURE 5
SUGGESTED COLD SEAL TRAP ARRANGEMENT
FOR EXPANSION TANK



You can design the cold seal arrangement quite simply by piping the expansion tank vent to a second tank where the vent line projects subsurface and can be flooded with additional Therminol 55 or 66 to minimize air contact in the expansion tank vapor space.

In converting from Therminol FR to Therminol 55 or 66, it is important to remember that many Therminol FR systems were designed with a hot bleed line into the expansion tank to eliminate moisture accumulation. Moisture accumulation in the presence of hydrogen chloride gas released during the decomposition of the FR fluids could contribute to acidity problems. This is not the case with Therminol 55 or 66; *therefore, this bleed line should not be used during normal operation of a Therminol 55 or 66 system.* This line should be *valved off* during operation but it could be retained as a convenient means of venting the system during initial startup after conversion.

Further protection against a hot expansion tank occurrence would be the removal of any expansion tank insulation and feeder line insulation.

Carbonaceous deposits can also occur at the pump seal face due to leakage at high temperatures. The use of a seal flush system or a double mechanical seal is helpful in preventing excessive seal wear.

Converting to Therminol 55 and 66

With fire-protection and oxidation-resistance procedures well in mind, let us turn to the matter of preparing the Therminol FR system for Therminol 55 or 66.

Accumulation of debris over the years in the system could cause serious problems, especially to mechanical seals, rotary joints, etc. All heat transfer systems should be cleaned from time to time as a part of normal preventive maintenance. Since a fluid change is neces-

GEN 000117

sary at this time, it would seem practical to use the downtime to thoroughly clean the system prior to startup on a fresh charge of fluid.

We strongly advise you *not* to simply drain and change, but to take this opportunity to clean your system. Many potential problems will be prevented by so doing.

Another reason for cleaning your system at this time is to assure complete removal of the Therminol FR fluid. A system cleanout is the only sure way to do so. How to go about the cleanout is a matter of choice, but here are some alternatives for your consideration:

A. Fluid Flush Cleaning

This method is probably the fastest and most effective where heating surfaces are not heavily fouled. It also offers the advantage of not having to introduce foreign chemicals into the system.

With this method, the system is drained of Therminol FR, re-filled with Therminol 55 or 66, operated for a reasonable period of time, drained once again, and finally, recharged with fresh Therminol 55 or 66.

Both the drained Therminol FR and the Therminol 55 or 66 used to flush the system may then be returned to Monsanto for disposal.

B. Solvent Cleaning

This method is satisfactory for cleaning a slightly soiled system, but chlorinated solvents must be avoided. Typical solvents used are benzene, and xylol (caution should be used with low flash point solvents). Do not use trichlorobenzene or perchloroethylene. (CAUTION: ALL SOLVENTS SHOULD BE COMPLETELY REMOVED FROM THE SYSTEM PRIOR TO OPERATING AT HIGH TEMPERATURES). Normally this is accomplished by drying the residual with warm air or by operating the refilled Therminol system at a temperature slightly above the boiling point of the solvent until the residual is vented from the system. Some *caution* should be used in drying the system to prevent flashing of the solvent with resultant discharge of Therminol from the system. Both the drained Therminol FR and the flushing solvent may then be returned to Monsanto for disposal.

Fluid Disposal

Monsanto offers an incineration service for the disposal of PCB heat transfer fluids and the flushing fluids mentioned above. For details of this service and how to return fluids to Monsanto for disposal, please write:

Monsanto Company
P.O. Box 14617
St. Louis, Missouri 63178

... or call (314) 694-2514 and ask for a Monsanto Heat Transfer Specialist.

GEN 000118

Handling: General Information

Heat transfer fluids are intended only for indirect heating purposes. Under no circumstances should any Therminol heat transfer fluid be allowed to come in contact with or in any way contaminate food, animal feed, food products, food packaging materials, food handling equipment, pharmaceuticals or any food-related items.

Therminol 55 and Therminol 66: Safety of Handling

According to the definitions of the U.S. Federal Hazardous Substances Labeling Act, Therminol 55 and 66 are not toxic substances since the oral and dermal lethal doses in animals are greater than 5 grams per kilogram of body weight. Additional animal studies indicate that they do not have significant skin or eye irritation potential. It is suggested however, that good industrial practice relating to the avoidance of repeated and prolonged skin contact to any industrial chemical, heat transfer fluids, or petroleum product be followed.

Therminol 55 and 66 have such low vapor pressures at ambient temperature that inhalation of vapors during transfer of fluid from shipping containers to a heat transfer system presents no hazard. Vapors emitted by either fluid at elevated temperatures may be irritating as would be the case with excessively heated petroleum oils. In heat transfer installations, the fluids are used in a closed, unpressurized system free from leaks and with the expansion tank vent trapped so as to condense any vapors and thus prevent their escape to the work environment. Consequently, there should be little or no opportunity for workers to experience any contact or exposure.

While it is believed that Therminol 55 and 66 pose no serious problems with respect to the environment, as a concerned supplier to industry, Monsanto urges the user to maintain a tight system, to correct leakage promptly, and to exercise care in the handling and disposal of this and all other such products. A tight maintenance program not only protects the environment, but keeps employees comfortable, the working area clean, and the system running smoothly.

GEN 000119

CUSTOMER SERVICE CENTERS

AKRON, OHIO 44313

260 Springside Drive
Montrose Development Park
Tel. (216) 666-4111

ATLANTA, GEORGIA 30339

320 Interstate North Parkway
Suite 500
Tel. (404) 432-7111

BOSTON, MASSACHUSETTS 02149

Everett Station
Tel. (617) 387-5010

CHICAGO, ILLINOIS

3158 Des Plaines Ave.
Des Plaines, Illinois 60018
Tel. (312) 296-6688

CINCINNATI, OHIO 45206

1501 Madison Road
Tel. (513) 751-6707

DETROIT, MICHIGAN

500 Northland Towers West
Southfield, Michigan 48075
Tel. (313) 357-0910

HOUSTON, TEXAS 77027

1301 Post Oak Tower
5051 Westheimer Road
Tel. (713) 621-9550

LOS ANGELES, CALIFORNIA 90022

6670 E. Flotilla St.
Tel. (213) 723-2492

NEW YORK, NEW YORK 10036

1114 Avenue of the Americas
Tel. (212) 764-5000

ST. LOUIS, MISSOURI 63166

800 N. Lindbergh Blvd.
Tel. (314) 694-1000

SAN FRANCISCO BAY AREA

2710 Lafayette
Santa Clara, California 95052
Tel. (408) 243-0414

SEATTLE, WASHINGTON 98121

2112 Third Avenue
Tel. (206) 622-4203

WILMINGTON, DELAWARE 19810

Suite 204, Bancroft Bldg.
3411 Silverside Road
Tel. (302) 478-4600

Monsanto Industrial Chemicals Co.

A Unit of Monsanto Company

800 N. Lindbergh Blvd., St. Louis, Mo. 63166

12/71

Monsanto

GEN 000120

GEN 000121

Monsanto 800 N. LINDBERGH BLVD., ST. LOUIS, MISSOURI 63166

WATER_PCB-00038795

bcc 1010 E. L. Shimley
B2Sa John Mason
P. W. Gann
J. J. Roder/D. E. Roush
1070 H. R. Ford
1650 P. L. Slayton

December 28, 1971

Mr. Wayne N. Grubaugh
Divisional Purchasing Director
Chemical & Plastics
General Tire & Rubber Co.
1708 Englewood Avenue
Akron, Ohio

Dear Mr. Grubaugh:

We apologize for the delay in sending you the attached notification on the discontinuation of Therminol[®] FR heat transfer fluid. Mr. John Mason, our Group Director, Functional Products has been trying to reach you to inform you personally of this decision but due to vacations at General Tire & Rubber has been unsuccessful in doing so.

If we can be of assistance to you in conversions to a non-PCB fluid please do not hesitate to contact us.

Very truly yours,

Cumming Paton
Product Manager
Heat Transfer, Dielectrics
and Process Fluids

CS
Attachment



GEN 000046

EXHIBIT
3
Gann 10-23-92
RSG

- ### 3. Progress of Conversion

<u>Date</u>	<u>Action</u>	<u>Initiated by</u>
3-16-72	called Ransford to alert him on need for 5 day or more lead time on 3000, TT, delivery. He will issue order next week.	(J.H.)

3-16-72 DISCUSSED ENGINEERING PROBLEMS
WITH RANSFORD AND SENT HIM INFO
ON NOFIRE DISCS, STEAM SHUT, ADDITIONAL
PROCEDURES AND MECHANICAL SEALS, PLANS
TO ORDER 3000 GAL T-55 FRESH SMO.

6-9-72 Laid orders for 100 lbs. of meat - ordered to be delivered
extending from midline to 9/2/72. 12 months.
to be delivered. One can find out more & more

8-7-72 Carol Gordon (C.G.) called saying they were expediting
the ACS. 651 shipment, but needed 10 dr T-55 immediately for
top up. Sybil / Gordon: Given → Unwired at Fort Clinton
bought 64 dr. T-55 in Iowa. Carol checked Shimmy to see if
can get 10 from there rather than out of Chicago

9-18-72 Lyster, trailer T-55, over load by sample indicated flake of unit and Horn
 Received battery 1" high in backing point. (Lyster said 0.5 me min 3. Customer had started
 unloading Monday (9-18) when Lyster called. Customer not notified
 of possible scale problem. assume air system move.
 Customer for 1000 gal more T-55. action needed.

40-6-72 W.D. Papazogian reported that the Toledo area Cart Ground is AMTRK reported the ground still in Toledo area.

10-9-72 at WOP's request, I finally got interviewed with Capt. Guard
(all done Oct 9, 1972 memo with notes). GEN 00

GEN 000511

10-13-72. Per Patric's suggestion, I called Son Time (Bob
Ranford) to advise them the Coast Guard had contacted us,
I read the letter portion of my Oct 9, 1971 Ltr to
"Captain of the Port Office"

2. Ranford said they were trying to keep the flush sludge
out of the storage tank; and were filling drums. Some
fluid spilled on floor; which ran into sump.
Unfortunately, sump pump went directly to sewer.
Modifications now made to prevent sump from
direct dump to sewer.
3. Terminal spill was actually flush fluid;
and therefore probably contained some PCB.

GEN 000512

bcc: 1010 - E. L. Shimley
C. Paton/D. E. Roush

September 21, 1972

Mr. R. Ransford
General Tire & Rubber Company
Textileather Division
P. O. Box 875
Toledo, Ohio 43601



Dear Mr. Ransford:

As agreed in our September 13, 1972 phone conversation, enclosed is a copy of a summary article of the Federal Government's Task Force on PCBs.

It is unfortunate that you had a system leak and lost considerable Therminol[®] FR fluid. As Jim Roder stated in his Feb. 22, 1972 letter, we do not recommend top-up with Therminol 55 or Therminol 66 fluids (and MCS-681 has chemistry and properties similar to Therminol 55). Some customers have had to top-up on an emergency basis - with varying success. Without an inert gas blanket on the expansion tank (to keep out oxygen and moisture from the air), fluid life can be very short. Also, a significant acid level in the FR is conducive to fluid degradation of the mixture. The conditions you described of no inert gas blanket on the expansion tank and operating over 4 weeks under an emergency top-up with MCS-681 are all conditions conducive to sludge formation.

The Mechanical Seal Problem Bulletin sent you on March 17, 1972 by Mr. Danzer may give you leads in resolving your current problems. I suggest immediate and complete drain of your system, a thorough flush with a non-PCB fluid (i.e. Therminol 55) and a refill with fresh non-PCB heat transfer fluid (rather than diluting on the fly). You may find additional cleaning (i.e. chemical) is necessary if your sludge condition is excessive and not corrected by a thorough system flush (operating 2-5 days with Therminol 55 at your normal 450°F temperature).

GEN 000430

Mr. R. Mansford
General Tire & Rubber Company
September 21, 1972
Page 2.

As discussed, you may have considerable iron chloride salts in your system. The salts are hard and may be a source of your recently experienced seal and rotary joint leaks. Spot flushing these areas and pieces of equipment is suggested in addition to a complete system flush.

Enclosed is a copy of our most recent publication of the Therminol Conversion Bulletin. Please note the suggestions on page 9 for inserting your expansion tank.

As to the disposal of used FR and FR containing fluids, please refer to Dr. Paton's May 25, 1972 letter (copy attached) for our incineration costs. If desired by you, we can work out arrangements for bulk return of the fluids. We prefer using a rail tankcar which we have dedicated to this service rather than a tank trailer.

Please feel free to contact me at (314) 694-2514 if there are questions.

Sincerely,

Paul W. Gann
Project Coordinator
Heat Transfer Fluids

Enclosures:
Therminol Conversion Bulletin
FDA Task Force on PCBs
Dr. Paton's May 25, 1972 letter

PWG:kl

Blind note to carbones:

1. Late July, 1972 the Toledo Plant lost about 1000 gallons of FR.
2. System conversion requires shutdown of a major production unit. This is the prime reason for the extended emergency top-up.
3. Complete conversion is now targeted for October.

P.W.G.

GEN 000431

bcc CP/DER

~~FMS~~

April 4, 1972

General Tire & Rubber Co.
Textileather Div.
P.O. Box 875
Toledo, Ohio 43601

Attention Mr. Bob Ransford:

Dear Bob:

Confirming our telephone conversation of last week we wish to include a bulletin describing our MCS 681 heat transfer fluid as an alternate for Therminol 55.

MCS 681 could be used as an emergency top up for your FR-1 system and we are also suggesting it as the flushing fluid because of a temporary availability situation with Therminol 55.

Very truly yours,

J. J. Roder

Product Supervisor
Heat Transfer Fluids

cc
Attachment
MCS 681 Bulletin



GEN 000557

REC'D APR 4 1972

*FEB: General Tunc
Toledo, Ohio*

cc: WB Papageorge B2MK
J Stapleton - B2SA
KL Shimley - 1010
C Paton

October 9, 1972

Captain of the Port Office
Room 501
Federal Building
234 Summit Street
Toledo, Ohio 43604



Dear Sir:

This letter confirms my phone conversation of October 9, 1972 with your Mr. Richard Mittelmeier. - MARINE INSPECTION OFFICE

We appreciate your advising us of the Therminol spill of October 6 (about 50 gallons) which fluid was eventually entrapped on the Ottawa Creek. It is my understanding from the conversation that recovery operations proceeded smoothly and that you believe the problem is under control.

We were unable to make contact with your office until October 9, as the number we were given to call was 419-259-6372 (no answer). We finally obtained number 419-259-6448 and were able to make contact.

It is my understanding that you have not identified the specific Therminol product involved; that is, whether a Therminol FR series fluid or a fluid like Therminol 55 or 66. The FR series were composed of the polychlorinated biphenyls (PCBs). The Therminol 55 and 66 fluids contain no detectable PCB materials. It is the FR series which has received unfavorable attention as a potential environmental hazard.

In the event the above mentioned spill involved PCB containing fluids, the enclosed articles may be of interest.

As I stated to Mr. Mittelmeier, Monsanto has responded to the increasing concern about PCBs by confining sales to certain limited end uses, as indicated in the FDA summary which is being emphasized by emphasizing users to return the fluids for proper disposal by high temperature incineration.

GEN 000515

Captain of the Port Office
Toledo, Ohio

-2-

October 9, 1972

If there are further questions, you may wish to contact our Mr.
W. B. Papageorge, Manager, Environmental Protection.

Sincerely,

Paul W. Gann
Project Coordinator
Heat Transfer Fluids

PWG:sj

Enclosures:

Wall Street Journal Article, 3/20/72
Summary, Fed. Gov't. Task Force on PCBs

Note to Carboneas:

1. Phone: 419-259-6372, Marina Inspection
419-259-6448, Coast Guard Station
2. Notes from phone call with Mr. Wittlesmeier:
 - a. General Tire notified local environmental department of spill. The EPA nearest office is Cleveland, so Coast Guard was called in to supervise cleanup.
 - b. With favorable winds, the fluid was entrapped in a small inlet on Ottawa Creek.
 - c. General Tire hired someone to soak up fluid with corn cobs. The Coast Guard does not know disposition of the saturated cobs.
 - d. Break area around the inlet has some Therminol fluid as water level at time of spill was high, then dropped during cleanup.
 - e. General Tire reported the cause due to a pump seal failure.
3. No followup with General Tire by conversion team. General Tire has not contacted the conversion team as of Oct. 9, 1972.
4. I did not advise Coast Guard on the status of General Tire's conversion
 - a. Late July, 1972 the plant lost 500 - 1000 gal. FR.
 - b. Has been using T-55 and MCS-681 for top up since April, 1972.
 - c. Sept. 18, 1972 we shipped 1 x 3000 gal. trailer of T-55. Conversion targeted for October. No free incineration; customer notified 9/13/72 (9/21/72 letter) that he pays freight and incineration. (In June customer was planning to ship FR to another Gen. Tire plant; but decision may have changed).

*sample like
found in
plant in T-12*

10-10-72

Richard Wittlesmeier called Gen. Tire to confirm which fluid was involved in the spill. He confirmed it was T-55 and that PCB was probably not involved. He appreciated our follow-up.

*W. Gann
10-10-72*

GEN 000516

10-11-72, Mr. Edward Noble, 216-333-700

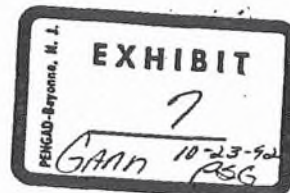
EPA - Ohio, the land
called for description of toxicity info on T-55, which
is what Sam [unclear] pulled. I read off data from
T-55 bulletin and readed Dept. Toxicology. [unclear]
told Noble to call [unclear] for any other info.
Noble felt no real problem on spill; [unclear] on
both sides of bank, [unclear] and [unclear] may have
run (1000) [unclear] [unclear] [unclear] [unclear]
inhibited [unclear] [unclear] [unclear] [unclear]

Barrow [unclear]
[unclear]

Coast Guard reported spill to EPA, [unclear]

GEN 000517

CONVERSION ACTION



1. Conversion Target Date

2. Monsanto Help Needed

3. Progress of Conversion

<u>Date</u>	<u>Action</u>	<u>Initiated by</u>
1-18-72	(At our Paul Kerk's request) I called Millward on conv. 1. 2nd FR-1 on hand; could last anywhere from 1 yr to a year; so must now get prepared to make conversion <u>Lawrence, Mass.</u> 2. Ken Toledo & Delta plants contaminated their FR with T-55; therefore he does not want to see their FR drain as originally planned. 3. His FR system is believed fairly clean; filled in 1967. 4. Expansion tank has desiccant to keep out water 5. Jay Millward, Plant Eng. Ed Lytwak, Maintenance Mgr.	Same
10-25-72	Bill Meisinger called, assigned to make dump out 1. Saw him T-55 price quoted. 2. Plan to order 2000 gal. T-55; 1000 for flush, 1000 fill. 3. Intend to put in an inline filter based upon experience at Lawrence & Toledo plants.	
10-27-72	Meisinger called to place order for 55 x 54, 2r. of T-55 P.O. 88357	

GEN 000387

Monsanto**MONSANTO COMPANY**
ST. LOUIS, MISSOURI 63166

DIVISION SALES

INVOICE

CUSTOMER'S ORDER NO. 06830		DATE ENTERED 09-14-72	DATE SHIPPED 09-18-72	INVOICE DATE 09-18-72	INVOICE NO 14-09-65911				
TEXTILEATHER DIVISION GENERAL TIRE & RUBBER COMPANY P.O. BOX 875 TOLEDO, OHIO 43601			2-2-1						
TEXTILEATHER DIVISION GENERAL TIRE & RUBBER COMPANY 3729 THINNING STREET TOLEDO, OHIO			WHSE	BOOKED THRU	S DIV	TERMS	TYPE	MODE	
			0046	11-38	02	020		02	
			ACCTS REC NO	CITY-STATE	CUSTOMER I D				
			285258	0815-34	10033187				
			DT		LOCK BOX 02				
PPD OR COL COL	DELIVERY FOB AS INDICATED BELOW	TERMS OF PAYMENT NET 30 DAYS				SHIPPER NO 5168661			
SHIPPED FROM CHOC BAYCU TX TRL6680		CAR NO TT CARRIER		CUSTOMER SERVICE REPRESENTATIVE C JORDAN					

EM	DESCRIPTION, PRICE & UNIT	AMOUNT
1	1 3000 GL TANK TRUCK THERMINOL 55 AT 3,313.51 GL 8418-055-10-0046-47-01-S-01338A .8250 2,733.65 FCB ALVIN TX 24,520.00 LB	
PAGE 1		2,733.65



REC'D SEP 26 1972

GEN 000521

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WATER_PCB-00038806

Monsanto**MONSANTO COMPANY**
ST. LOUIS, MISSOURI 63166

DIVISION SALES

CREDIT

CUSTOMER'S ORDER NO.	DATE ENTERED	DATE SHIPPED	INVOICE DATE	INVOICE NO.
85644	- -	04-05-72	04-05-72	14-04-94268

TEXTILEATHER DIVISION
GENERAL TIRE & RUBBER COMPANY
P.O. BOX 875
TOLEDO, OHIO 43601

2-2-1

COPIES TO

TEXTILEATHER DIVISION
GENERAL TIRE & RUBBER COMPANY
DAYTON AND STICKNEY STREETS
TOLEDO, OHIO

WHSE	BOOKED THRU	S. DIV	TERMS	TYPE	MODE
1446	11-53	02			02
ACCTS. REC. NO.	CITY-STATE	CUSTOMER I.D.			
285258	0815-34	10033187			
DT	LOCK BOX 02				

PPD OR COL.	DELIVERY F.O.B.	TERMS OF PAYMENT	SHIPPER NO.
	AS INDICATED BELOW		489162

SHIPPED FROM	CAR NO/TT CARRIER	CUSTOMER SERVICE REPRESENTATIVE
HOUSTON TX		JORDAN

EM	DESCRIPTION, PRICE & UNIT	AMOUNT
	CREDIT TO CORRECT PRICE ON INV 140440459 DTD 4-5-72 FROM :1.05 TO .975 GL	
	2 54 GL METAL DRUM THERMINOL 55 AT 108.00 GL 8418-055-10-0046-47-01- -01338A .0750 FOB ALVIN TX NO WGT	8.10
	<i>Emergency. Making for FR sup. prior to conv.</i>	
	PAGE 1	8.10



GEN 000555

REC'D APR 27 1972

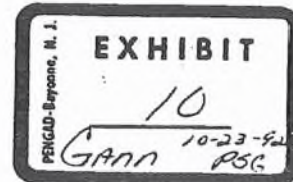
INTERNAL COPIES DISTRIBUTION AND SPECIAL INVOICE INSTRUCTIONS AS INDICATED ABOVE.

WATER_PCB-00038807

Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
800 N. Lindbergh Boulevard
St. Louis, Missouri 63186
Phone: (314) 694-1000

May 25, 1972



Dear Sir:

On December 15, 1971 Monsanto Company advised your company of the termination of the sale of its Therminol® FR series heat transfer fluids. At that time, we offered to pay freight costs incurred in returning the Therminol FR to us and costs for proper disposal of the material (by high temperature incineration). Many companies have taken advantage of this offer.

We are now writing to advise you that, effective July 1, 1972, Monsanto will terminate this offer because we anticipate the majority of conversions will be completed by that time.

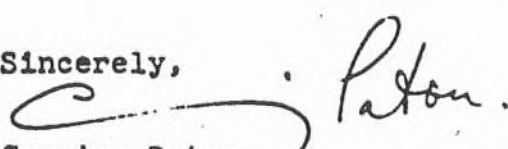
After July 1, 1972 however, we will, until further notice, continue to make available our high temperature incineration service for proper disposal of any Therminol FR fluid or fluids contaminated with PCB's*, which your company may have on hand, on the following basis:

1. We will charge 3¢/pound to incinerate fluids sent freight prepaid to our Sauget, Illinois plant for:
 - a) Therminol FR series fluids.
 - b) Therminol 55 or 66 fluids which may contain PCB's formerly in your system.
 - c) Monsanto's MCS-681 flush fluid used for flushing a PCB heat exchange system.
2. We will charge 5¢/pound to incinerate non-aqueous, non-Monsanto fluids contaminated with PCB if sent freight prepaid to our Sauget, Illinois plant.

If you desire this service, please call (314) 694-2514 or write to Dr. Cumming Paton, Monsanto Company, P. O. Box 14617, St. Louis, Mo. 63178.

Thank you for your cooperation.

Sincerely,


Cumming Paton
Product Manager
Heat Transfer, Dielectrics
and Process Fluids

*Polychlorinated Biphenyls
CP:kl

a unit of Monsanto Company

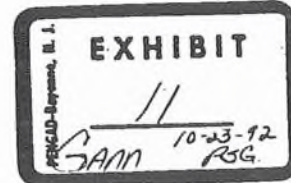
GEN 000456

WATER_PCB-00038808

Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
800 N. Lindbergh Boulevard
St. Louis, Missouri 63186
Phone: (314) 894-1000

December 15, 1971



Dear Sir:

We are writing to advise you that, effective this date, Monsanto will no longer sell the Therminol® FR series of heat transfer fluids. This important decision by Monsanto's management has been carefully considered.

The Therminol® FR series of fluids contain polychlorinated biphenyls (PCBs). As we have previously advised you, studies indicate PCBs may be accumulating in the environment. In some instances, PCBs have been found in food or in the food chain. An article by Carl G. Gustafson of the Federal Water Quality Administration appearing in "Environmental Science & Technology" and dealing with this subject is attached for your information.

Because of Monsanto's concern over this problem, we have discontinued sales of PCBs where the usage was in so-called "open systems." We have discontinued sales of Therminol® FR materials where the usage would be in food processing applications. In addition, we have encouraged Therminol® FR fluid customers to switch to other materials.

As a result of these efforts, many of our heat transfer fluid customers have switched from Therminol® FR series fluids to other materials or systems.

Our action in discontinuing sales for use in heat transfer systems has been taken because of the problems which may arise should there occur accidental leakage of PCBs from such systems. We believe this action is in the best interest of all our customers who have continued using these materials in heat transfer applications.

GEN 000446

a unit of Monsanto Company

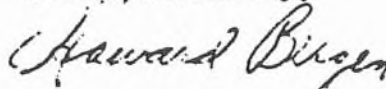
WATER_PCB-00038809

In order to help you accomplish a change-over from Therminol® FR to another heat transfer fluid with the least difficulty, Monsanto will offer you the following special services:

- 1) We have assembled a team of experienced engineers who will be available to visit your plant on request to consult with you on available alternatives. Of course, the decision is and will be yours as to how you elect to proceed. If you consider such a service would be of assistance to you, please telephone (314) 694-2514, or write directly to Dr. Cumming Paton, Monsanto Company, P. O. Box 14617, St. Louis, Missouri 63178.
- 2) We will pay freight costs incurred in returning the Therminol® FR to us and will properly dispose of the material (by high temperature incineration) at our cost. We will contact you concerning instructions about drainage, drumming and shipping of material to our facility in St. Louis.
- 3) We will accept return of any unopened drums of Therminol® FR series products which may be in your possession and credit you for this material at full purchase price if returned to us prior to March 1, 1972.

We sincerely regret any hardship that this decision may cause you, but feel you will agree Monsanto has made the correct decision.

Yours sincerely,



Howard Bergen, Director
Specialty Products Group
Monsanto Industrial Chemicals Company

Attachments

GEN 000447

PCB's—prevalent and persistent

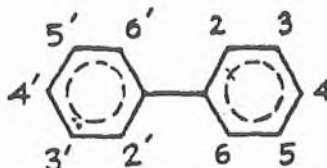
Intensified research is needed to minimize their dangers

Carl G. Gustafson, Federal Water Quality Administration, Athens, Ga.

During the past three years, a special class of compounds, called polychlorinated biphenyls (PCB's), has claimed the attention of ecologists and pesticide analysts in this country. These compounds were not discovered in the environment until 1966 in Sweden and 1967 in the U.S., despite the fact that they have been available commercially for 40 years. Interest in PCB's has arisen because they are frequently found in fish, bird, water, sediment, and other environmental samples when such samples are examined for chlorinated pesticide residues. That a wide variety of samples containing PCB's has been collected from England, Scandinavia, The Netherlands, Antarctica, Central America, and many different parts of the U.S. makes them truly ubiquitous pollutants.

Polychlorobiphenyls are made by substituting chlorine atoms for one or more of the hydrogen atoms at the

numbered positions of the biphenyl structure.



In the process of replacing hydrogen atoms with chlorine atoms, a large number of substitution combinations arise. For example, three monochlorobiphenyl isomers are possible, 12 dichlorobiphenyl isomers, 21 trichlorobiphenyl isomers, and so on. Theoretically, 210 compounds can be prepared by this substitution process; a typical example would be 2,4,6,2',4'-pentachlorobiphenyl.

Whenever aromatic hydrocarbons such as biphenyls are chlorinated, the product is a mixture of compounds, including isomers. It is quite difficult to synthesize single, specific chlorobiphenyl compounds in the laboratory unless involved procedures are employed. Consequently few of the individual compounds have been prepared in the pure form for study.

In the commercial process for PCB manufacture, biphenyl is chlorinated with anhydrous chlorine in tall cylindrical towers with either iron filings or ferric chloride as the catalyst. The by-product is hydrogen chloride; the product is a mixture of several PCB's. The degree of chlorination is determined by measuring the specific gravity of the mixture or, when the product is more viscous, the ball-and-ring softening-point test is used. The whole process takes from 12 to 36 hours.

In the U.S., the sole manufacturer of PCB's is the Monsanto Co., which markets them under the trade name

Aroclor. PCB's are also manufactured in Europe and Japan, under trade names such as Phenochlor and Clophen. The various Aroclors are differentiated by a four-digit number, with the last two digits indicating the percentage of chlorine in the mixture.

Properties

The three most important physical properties of the PCB's are low vapor pressures (they have high boiling points), low water solubility, and high dielectric constants. They are miscible with most organic solvents and compatible with many types of polymers. Although some individual polychlorobiphenyl compounds are crystalline, the Aroclor mixtures are either liquids or resins.

The chemical properties that make PCB's desirable industrial materials are their excellent thermal stability, their strong resistance to both acidic and basic hydrolysis, and their general inertness. They are quite resistant to oxidation. Monsanto reports, in a technical bulletin on PCB's, that they can be heated to 140° C. under 260 p.s.i. of oxygen pressure "without showing any evidence of oxidation as judged by development of acidity or formation of sludge."

The physiological properties of the PCB's make them potentially significant contaminants of the environment. For any pollutant, two factors are involved: acute toxicity, which is immediately evident because of a high death rate or other maiming effect; and chronic toxicity, which is the result of a slow accumulation of the poison in the body and is a sublethal effect. Whenever acute toxicity is high, a pollutant will be readily recognized and appropriate remedial actions will be introduced. If, on the other hand, acute toxicity is low,

The Monsanto Co. stated recently in a letter to Congressman William F. Ryan of New York that as of August 30, it would no longer sell PCB's to customers for use in general plasticizer operations where disposal of the end-products cannot be controlled. After some lag period—the time it takes to eventually dispose of the products made from PCB's and currently in processor's inventories—the quantity of PCB's getting into the environment may be substantially reduced. If Monsanto's former customers look for PCB substitutes, rather than purchasing PCB's from manufacturers in Japan and Europe, the projected decrease could become a reality.

Carl G. Gustafson

the physiological effects will go unnoticed until the chronic effects make themselves evident. When this happens, the problem may have advanced beyond immediate or easy correction.

Acute toxicity

All studies of PCB's in animals indicate that acute toxicity is not a significant factor. Their acute toxicities are on the order of those of other chlorinated aromatic compounds. Monsanto has sponsored two investigations of the acute toxicities of Aroclor mixtures. In the first, at the Kettering Laboratory at the University of Cincinnati, Dr. J. F. Treon and his co-workers investigated the toxicity of Aroclor vapors for guinea pigs, mice, rabbits, and rats. All animals survived a 24-day exposure to 0.83 p.p.m. of Aroclor 1242 for 7 hours per day on 17 of those days. Even after more prolonged tests, there were no severe effects from Aroclor 1242. In the second investigation, still in process, three groups of beagles are fed Aroclor 1242, 1254, and 1260, respectively, at a rate of 100 p.p.m. in their diets. After three months no significant abnormalities have been noted.

Similar studies on fish have been performed in several laboratories. Dr. Richard Schoettger of the Sport Fisheries and Wildlife Fish-Pesticide Research Laboratory in Columbia, Mo., reports that 96 hour- TL_{50} toxicities of the Aroclors to trout range from 1.17 to 60 p.p.m. Compared to DDT, whose 96 hour- TL_{50} toxicity is 0.002 to 0.009 p.p.m. for trout, the PCB's have a relatively low acute toxicity. With the more sensitive bluegill, the 96 hour- TL_{50} for Aroclor 1248 is 0.278 p.p.m., while that of DDT is 0.008 p.p.m. Aroclor toxicities appear to be inversely proportional to the chlorine content of the mixture.

Shellfish, oysters, and shrimp are more sensitive to PCB's. Dr. Tom Duke, at the Bureau of Commercial Fisheries Pesticide Field Station, reports 100% mortality of juvenile pink shrimp exposed to 0.10 p.p.m. of Aroclor 1254 in water for 48 hours. This concentration of Aroclor 1254 will cause a 100% decrease in shell growth of oysters after 96 hours. To achieve the same effects with DDT in these experiments, only 0.0006 p.p.m. and 0.01 p.p.m., respectively, were required.

There is very little evidence that PCB's are toxic to insects. Studies to date show that they are less toxic than

dieldrin or DDT. As with fish, their toxicity appears to be inversely proportional to the chlorine content of the mixture.

Based on the above data, it is understandable why the polychlorobiphenyls, commercially available for 40 years, have only recently attracted attention as toxic environmental contaminants.

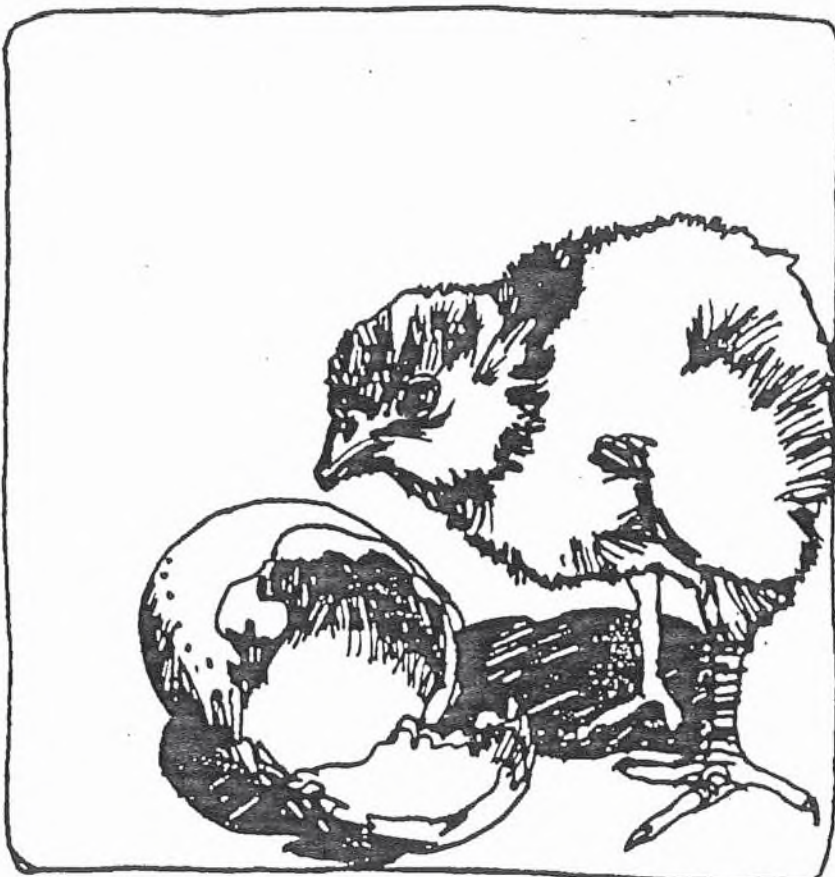
Chronic toxicity

The chronic toxicities of PCB's present a more disturbing situation; several chronic effects have been observed. It was discovered, quite by accident, that PCB's have a toxic effect on chickens. Professor E. L. McCune and his co-workers at the University of Missouri found their chickens dying after they were placed in a feeding house, parts of which had been freshly painted with an epoxy paint. Careful investigation revealed that the toxic factor was Aroclor 1242, a binder in the paint. When Aroclor 1242 was fed to the chicks it produced the same characteristic effects as chick edema factor. McCune reported: "Gross pathology included hydropericardium, hydroperitonium, enlarged heart, liver, and kidneys, and hemorrhage of internal organs. Mi-

croscopically the kidneys showed marked tubular dilation and numerous casts."

Another chronic effect of PCB's is related in wildfowl. The accumulation of high concentrations of chlorinated hydrocarbons in birds resulted in disruption of normal breeding behavior and in the formation of thin-shelled eggs. A dramatic example of this effect has been observed in the case of the brown pelican. On the Anacapa Islands off the California coast, no young were hatched last year from 300 pairs of nesting birds. The shells of most eggs laid were so thin that a dent occurred when the egg was picked up.

There are two possible causes for the laying of thin-shelled eggs by wildfowl. One is a low calcium reserve in the bird; the other is the inability of the bird to deliver the needed calcium to its oviduct, where the eggshell is forming. The calcium level in the avian biosystem and the calcium reserve in the secondary bone structure or medullary bone, found only in female birds when they are breeding, are controlled by the hormone estrogen. A high estrogen level is associated with the formation of this calcium reserve. Chlorinated hydrocarbons, such as DDT,

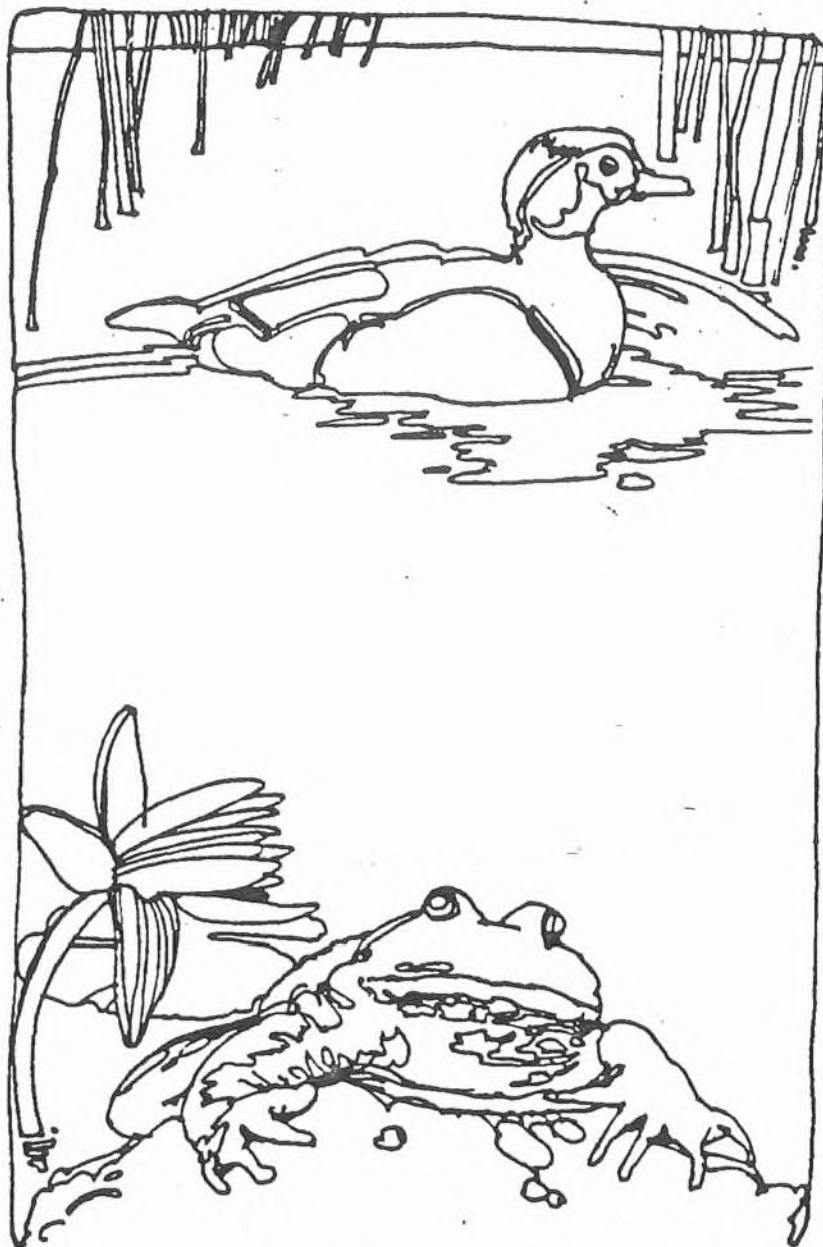


chlordane, dieldrin, and PCB's, activate enzymes in the liver which transform estrogen into a more water-soluble compound that is readily eliminated from the bird's body. This means that when estrogen levels are low, calcium reserves will also be low, and therefore very little calcium will be available for strong eggshell production. Dieldrin and PCB's are more effective than DDT in this type of enzyme-induction activity. Aroclor 1262 has an estradiol degrading potential four to five times that of *p,p'*-DDT or technical grade DDT.

The ability of the female bird to deliver calcium to her oviduct during the last 20 hours, when the eggshell is being formed, is related to the functioning of the enzyme carbonic anhydrase. When birds that have exhibited the ability to lay normal eggs are injected with a metabolite of DDT (DDE) just prior to the formation of the eggshell, they will lay thin-shelled eggs. This indicates that DDT also inhibits the activity of carbonic anhydrase, the enzyme that controls the flow of calcium from the blood stream of the bird into its oviduct.

Since dieldrin seems to have no effect on carbonic anhydrase, we may assume that neither do the PCB's. However, these compounds delay breeding time significantly. Many ornithologists feel that late breeding has a stronger influence on the reduction of bird populations than does the laying of thin-shelled eggs. If this is true, PCB's are a more potent threat than DDT to our declining bird populations, especially for predatory birds that accumulate fairly high levels of PCB's because they eat smaller animals that already have concentrated PCB's in their own tissues.

Other investigators have produced evidence to show that PCB's are similar to DDT in their activity. Dr. Joseph Street at Utah State University has shown that when PCB's accumulate in the liver, they induce microsomal enzyme activity by bringing about more rapid metabolism of drugs, insecticides, and other foreign compounds. He fed rats a diet containing 50 p.p.m. of Aroclor 1254 or Aroclor 1260. After 10 days on this diet, the test animals were administered hexobarbital at a dose of 100 p.p.m. to induce sleep. In comparison with a control group, the sleeping time for these rats was reduced by 65 to 80%. Street also found that Aroclor, when fed at the



same level, will reduce dieldrin storage in adipose tissue by 90 to 95%; increase aniline oxidation by 200 to 300%; and increase EPN detoxication by 430 to 470%. In addition, the PCB's cause activation of organothiophosphate compounds, which adversely affect the system. This latter effect counterbalances the detoxification of dieldrin.

Normally, when a substrate activates an enzyme, it is converted to a water-soluble form that will be eliminated from the system; however, this is not the case with PCB's. Because they remain in the system for prolonged periods of time, their enzyme induction activity is always present. In this way the normal concentration of important body chemicals may be lowered to the

point of bringing about malfunctions in the system. For example, Street believes that the PCB's bring about steroid degradation, which can lead to altered endocrine relationships.

The chronic toxicity to man is as follows:

Like the chlorinated naphthalenes, the chlorinated diphenyls have two distinct actions on the body, namely, a skin effect and a toxic action on the liver. The lesion produced in the liver is an acute yellow atrophy. This hepato-toxic action of the chlorinated diphenyls appears to be increased if there is exposure to carbon tetrachloride at the same time. The higher the chlorine content of the diphenyl compound, the more toxic it is liable to be. Oxides of chlorinated diphenyls are more

toxic than the unoxidized materials.

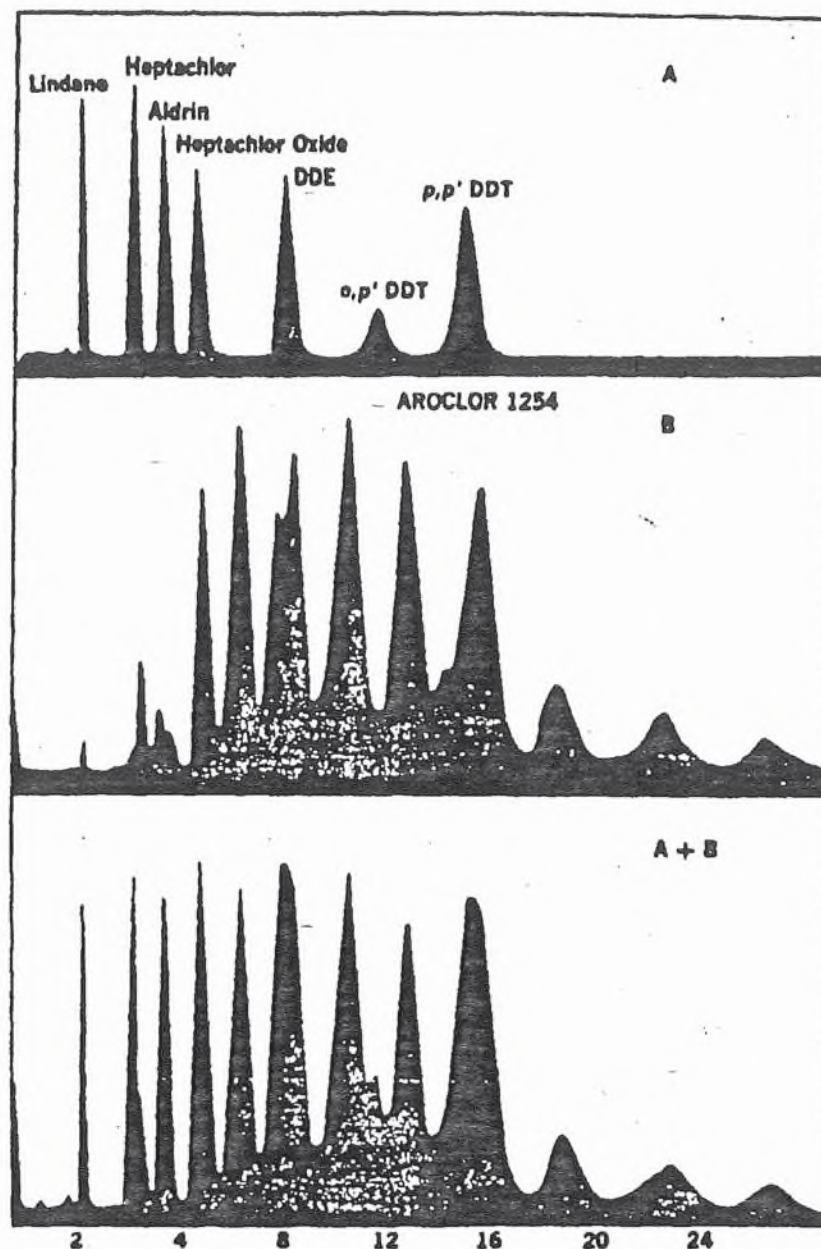
The skin lesion is known as chloracne, and consists of small pimples and dark pigmentation of the exposed areas, initially. Later, comedones and pustules develop. In persons who have suffered systemic intoxication, the usual signs and symptoms are nausea, vomiting, loss of weight, jaundice, edema, and abdominal pain. Where the liver damage has been severe, the patient may pass into coma and die.

Sav. N. Irving, "Dangerous Properties of Industrial Materials," 3rd ed., Van Nostrand-Reinhold, New York, 1968.

The ubiquity of PCB's is related to the wide spectrum of applications that have been found for them. The largest single use of PCB's is related to their electrical properties—as coolant-insulation fluids in transformers. For this purpose the Aroclors are also sold under such trade names as Chlorextol (Allis-Chalmers Mfg. Co.), Dykanol (Federal Pacific Electric Co.), Inerleen (Westinghouse Electric Co.), No-flamol (Wagner Electric Co.), Pyranol (General Electric Co.), and Therminol (Monsanto Co.).

Other uses of PCB's include formulation into ballasts for fluorescent fixtures; impregnation of cotton and asbestos for braided insulation of electrical wiring; a plasticizer in wire and cable coatings; capacitors and askarel-type transformers; and plasticizers of vinyl chloride polymer films. Because of their thermal stability and fire resistance, the PCB's also find application in high-pressure hydraulic fluids, specialized lubricants and gasket sealers, heat transfer agents, and machine tool cutting oils. Miscellaneous uses include: formulation into some epoxy paints; protective coatings for wood, metal, and concrete; adhesives; and in carbonless reproducing paper. One of the primary manufacturers of carbonless reproducing paper also sells Aroclors in an encapsulated form.

Generally the kinds of applications described above mean that the PCB's will be in many types of products that eventually find their way to the domestic market. When used in manufacture of ballasts for fluorescent fixtures they will be found in kitchens, bathrooms, stores, and offices throughout the country. Wherever office forms are used that do not use carbon paper, one may find PCB's formulated into the microcapsules of dye that comprise the re-



Gas chromatogram A is of a standard pesticide mixture, B is typical of Aroclor 1254, and A + B is the chromatogram of a 50 : 50 mixture of both. The concentration of Aroclor 1254 is approximately 10 times those of the pesticides in A, hence it is understandable why PCB's were not readily recognized in pesticide chromatograms. Gas chromatograph (Packard 7620) conditions: gas flow 80 ml./min. nitrogen; temperatures—oven, 210° C., inlet, 230° C., detector, 218° C.; Ni⁶³ electron capture detector; 5' x 1/8" glass column packed with 8% SE-30 on Chromosorb Q 80-90 mesh.

producing layer of the business form. PCB's have also been found on the transparent receipts used in credit card charge forms. As plasticizers they can be expected to appear in many consumer plastics.

Since the chronic toxicities are so significant, it becomes important to know just how extensively the PCB's are distributed in the ecosystem, and just how they find their way into

the environment. Rainwater in England, brown seals off the coast of Scotland, white-tailed eagles in Sweden, cod in the Baltic Sea, mussels in The Netherlands, adelic penguin eggs in the Antarctica, brown pelican eggs in Panama, Arctic terns, shrimp in Florida, river water in Japan, waters in the Great Lakes, human hair, and human adipose tissue—samples of all these have been found to contain PCB's.

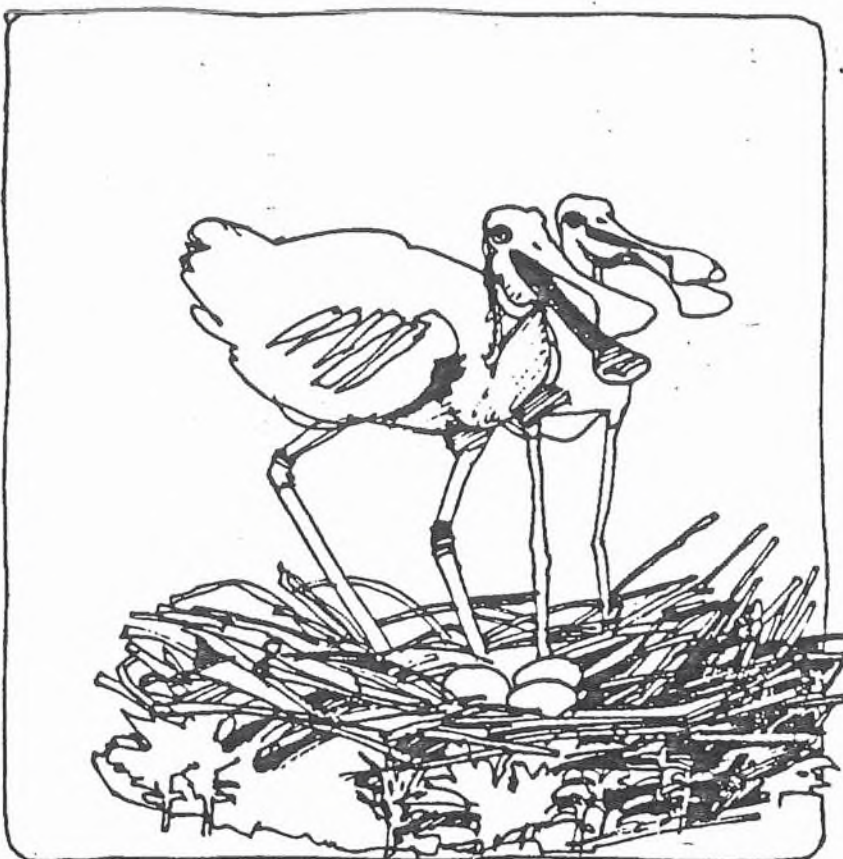
thus making them a class of widely dispersed pollutants.

Readily absorbed

The properties of PCB's that make them industrially useful are the same properties that cause them to persist in the environment. These include thermal stability, resistance to oxidation and hydrolysis, solubility in a wide range of organic solvents, water insolubility, high dielectric constant, and compatibility with many types of macromolecules. Their resistance to oxidation and hydrolysis also makes PCB's more stable and persistent than DDT. Consequently, they could eventually accumulate to a higher concentration than DDT, especially if the use of DDT is sharply curtailed in the U.S.

The solubility of PCB's in nonpolar solvents explains why they are readily absorbed into fatty tissue and into the liver. Their resistance to oxidation or other types of chemical degradation explains their persistence in the environment and accumulation in animal tissue. The latter effect is enhanced both by their insolubility in water and solubility in organic solvents. Their chemical inertness and resistance to metabolism account for their low acute toxicity. But as they slowly build up in a living system their concentration approaches toxicity levels, at which point chronic effects make themselves evident.

It has been established that fish-eating birds will accumulate large concentrations of PCB's, as in the case of the white-tailed eagle, which has been found to have as much as 14,000 p.p.m. of PCB's. Peregrine falcons, taken off the coast of California, were found to have as much as 2000 p.p.m. in their lipid tissue. When shrimp were exposed to 10 p.p.b. of Aroclor 1254 for 48 hours, they accumulated 1308 p.p.b. of PCB's, which represents a 130-fold concentration in a very short time. Oysters, exposed to an identical concentration of Aroclor 1254 for 96 hours and then placed in PCB-free water for four days, still had a concentration of 33,000 p.p.b. of PCB's, which constitutes a 3300-fold concentration. This means that even though the concentrations of PCB's are in the parts-per-billion range in the environment, their high lipid solubility causes them to collect in fatty tissues of lower animals and marine life. Therefore, species at the top of a food chain will also accumulate PCB's in their bodies, particularly in their lipid tissue and liver, in much the same



way as they accumulate DDT and other chlorinated pesticides.

Because of the low solubility of PCB's in water, when a solution or dispersion of them is discharged into a river or lake, they will accumulate on the sediment in relatively high concentrations. Subsequently, they will redissolve very slowly in the water as conditions change. Therefore, it will usually take a long time to flush out a contaminated area.

Accidental occurrences

The reason that PCB's have not been found in the ecosystem as extensively as DDT, and are not present in environmental samples at as high a concentration as DDT, is that PCB's find their way into the environment accidentally. DDT is deliberately spread because this is the only way its insecticidal properties can be utilized. PCB's are not intended to get into the environment, but they do because their unique chemical properties prevent them from being destroyed by our usual waste disposal methods. Thus, they inadvertently escape and become widely dispersed.

In Sweden, where the use of DDT has been banned, and where the main power source is hydroelectric, investi-

gators find that the concentration of PCB's in the environment is as high as that of DDT.

There are several ways by which PCB's get into the ecosystem. One of these is by incineration. Products containing PCB's, such as carbonless reproducing paper in business forms, plastics (especially polymer film and sheeting that contain PCB's as plasticizers), spent ballasts from fluorescent light fixtures, and objects coated with PCB-formulated coatings, all find their way to the city dump or incinerator for burning. The PCB's do not burn but are vaporized. They are then carried into the atmosphere, where they collect on particulate matter and are subsequently returned to the surface of the earth, into the rivers, lakes, and oceans. In this way they become widely distributed throughout the global environment. Another source is probably land run-off from industrial wastes and dumps. A third source is the point of manufacture and the plants where PCB's are processed into other products. They can escape through the plant ventilation and exhaust systems into the atmosphere and through its waste treatment system into sewers or directly into waterways.

It is interesting to note that the incidence of PCB's in environmental samples is highest in industrialized and urbanized areas. Birds whose primary habitat is the San Francisco Bay area have a larger concentration of PCB's per unit of body weight than those located in Baja, Calif., which is completely rural. Aquatic life in the Archipelago of Stockholm, the most industrialized area of Sweden, were found to have a higher concentration of PCB's than fish samples taken from the western coast of Sweden, a less developed area. Sediment samples taken from southern portions of Lake Michigan have a higher concentration of PCB's than those from other parts of the lake.

Monsanto states that until a recent change in marketing policy (see inset, page 814), sales of Aroclors were increasing at the rate of 8% per year. While this increase does not seem significant, it may be important if the increased consumption was in consumer products and thus would find their way into our normal solid waste disposal systems. Such an occurrence would mean a definite increase of PCB residues in the environment, and therefore a marked increase in their chronic toxic effects.

Detection

PCB's were not discovered in environmental samples until very recently for several reasons. First, as indicated above, they have not been deliberately distributed about the ecosystem. Secondly, because of their relatively low acute toxicities, their presence was not immediately evident. Finally, they are difficult to detect analytically.

The PCB's were first detected as interfering peaks in the gas chromatographic analysis (GC) of environmental samples being analyzed for chlorinated pesticide residues. When PCB's are present in a sample they give a pattern of several GC peaks, whose retention times are similar to those of dieldrin, DDT, DDE, aldrin, and heptachlor oxide. Because the peaks were not large or sharp, investigators tended to ignore them until S. Jensen, in Sweden, and R. Risebrough, at the University of California at Berkeley, identified them as corresponding to common constituents of environmental samples being analyzed for persistent pesticides.

The problem of the interferences of PCB's with the analysis of other chlorinated pesticides has been largely overcome by prior treatment of the sample. Several investigators have used

column chromatography to separate PCB's from chlorinated pesticides. At a recent meeting, sponsored by the FWQA's National Water Quality Laboratory, Duluth, Minn., a general procedure was recommended for separation of PCB's from pesticides. In this procedure for biosamples, the sample is extracted with hexane as in regular pesticide analysis. It is then partitioned with acetonitrile to remove fats, the cleaned-up extract is passed through a Fluorisil column and then through a silicic acid column. Finally, the sample is analyzed by gas chromatography, with a chloride-specific detector. In this way the pesticides are retained on the silicic acid column for later elution and identification.

Research needs

To assess fully the significance of PCB's as environmental pollutants, additional research is needed. No one really knows the extent of the chronic effects of these chlorinated hydrocarbons. Some problems that need to be considered are:

- Although PCB's are known to accumulate in human organs we do not know at what concentration they will begin to exhibit toxic effects. Will these chronic effects be similar to those shown in animals—microsomal enzyme activity, calcium metabolism inhibition, and so on? What are other possible chronic effects?

- Which of the many PCB compounds in the commercially available mixtures are responsible for their toxicity? Can commercial PCB mixtures be modified to eliminate the toxic components? Pure samples are required to answer these questions. At the present time work is continuing at the FWQA's Southeast Water Laboratory to separate each of the Aroclor mixtures into its many components, and to identify each component.

- We need to know all the uses for the PCB's. What is the annual production of PCB's? Our knowledge of these facts is limited and needs to be expanded. These facts should be known if we are to accurately determine how they get into the environment, and take steps to prevent further environmental contamination by them.

- In view of the complexity of the isolation and accurate quantitative analysis of PCB's in chlorinated residues, a straightforward, unambiguous measurement of them needs to be developed.

- What is the fate of PCB's in natural waters? More needs to be known of their partition coefficients between bottom sediments and water. This is vital if we are to estimate how long it will take for a river bed to clean itself of contamination. It will also be useful when assessing the effects of PCB's on marine life that feed on the bottoms of lakes, rivers, and estuaries. We should also learn more about PCB solubility in water of various ionic strengths.

- Are present waste treatment systems adequate to handle PCB's? Do special measures need to be taken when PCB's are part of the waste effluent being treated?

By trying to get some of these answers now, we may find that we are in a position to control the escape of PCB's into the environment before additional damage is done. So frequently, action is taken only after it is evident that massive damage has resulted from a particular pollutant. In the case of the PCB's we may have an opportunity to resolve the situation before that happens.

Additional Reading

- Hubbard, H. L., "Chlorinated Biphenyl and Related Compounds," *Encyclopedia of Chemical Technology*, 2nd ed., 3, Interscience Publ., New York, N.Y., 1964, pp. 289-298.
 Reynolds, L. M., *Bull. Environ. Contam. Toxicol.* 4, 128 (1969).
 Risebrough, R. N., et. al., *Nature* 220 (1968).



Carl G. Gustafson, chairman of the Department of Chemistry of King's College, Briarcliff Manor, N.Y., received a Ph.D. in organic chemistry from the University of Delaware in 1957. During the 1969-70 academic year, he was on leave at the FWQA Southeast Water Laboratory in Athens, Ga., where he studied trace organic analysis in waste effluents. As a member of the National Water Contaminants Characterization Research Program, he worked with PCB's and pulp and paper mill effluents.

Monsanto

EXHIBIT

12

GANN 1023-92
PAG

FROM (NAME & LOCATION) B2SC J. J. Roder

DATE February 24, 1972

SUBJECT Trip Report

REFERENCE

cc: B2SC D. E. Roush
B2SD ~~P. W. Gann~~
1010 E. L. Shimley
1320 G. F. Fague

TO : C. PATON

COMPANY CONTACTED: General Tire & Rubber Company
Toledo, Ohio

PERSONS CONTACTED: Doug Bulson, Plant Engineer
Bob Ransford, Maint. Supt.
William Lang, Central Eng. Akron
John Crozier, Central Eng. Akron

DATE OF CALL:

Summary

The purpose of this visit was to discuss in detail all the events surrounding the PCB problems and also to give advice regarding conversion of their FR system to a non PCB material. This location has a large Union Iron Works heater which is used to heat about eight separate zones most of which are heating calendar rolls used in the production of vinyl materials used for automobile interiors. This system originally was filled with a Ucon heat transfer fluid and some years ago was converted to Therminol FR because of a fire at this location. --

The heater basically supplies hot fluid to a large storage tank within its own individual pump. From the large storage tank they have another system pump which circulates the fluid to the eight zones throughout the plant. Each zone also has its own circulating pump and modulating control valve to individually control temperature in each of these zones. The pumps for these zones are all located in the basement and there will be some problem with drainage at this point. However the feeling was that they could cut the lines to more adequately drain the material. This area appeared to have quite a large amount of leakage and they were cautioned to try to tighten up the piping to prevent leaks with a non fire resistant fluid. Most of these pumps were typical centrifugal Dean Brothers pumps. However, they do have three Eastern Industries can pumps which are sealless and the tendency would be to go to additional can pumps in the future.

WILL ASK
STG & E.P.I.
T.A.K.

PLAN TO CONVERT ALL
REMAINING CENTRIFUGAL PUMPS
TO CAN PUMPS NEXT YEAR

REC'D FEB 25 1972

GEN 000380

DEF
3/16/72

Another area of concern regarding fire hazard is in the vicinity of calendars where the large rotary joints and flexible hoses have a tendency to leak. This would not be a particular problem. However, each of the calendar rolls appears to be equipped with radiant heat located beneath the rolls which could be a source of ignition should either a hose or a rotary joint fail. Steam snuffers have already been installed at these locations and hopefully this would extinguish a fire should it occur.

Normal operating temperature at this location is in the area of 410 to 450°F. The total system has about 2500 to 3000 gallons in the system and I am sure that they will use Therminol 55. They expect to order about 2500 to 3000 gallons in bulk to flush the system and after operation for a couple of weeks they will then redrain and refill with clean material.

Lawrence They will probably save some of their used FR material to act as makeup for their other General Tire locations. The other locations are ~~Lux~~, Mass.; Jeanette, Pa.; and Columbus, Miss. These systems will be converted at a later date; however, one of the systems at ~~Lawrence~~ was designed for Therminol FR and will be more difficult to convert than the other systems which were designed around combustible fluids.

Jeanette, Pa
Action Required

Roder to confirm by letter to Bob Ransford with copy to John Crozier regarding the details of our meeting including pricing information on Therminol 55.

J. J. Roder
J. J. Roder

CS

GEN 000381

Monsanto

FROM (NAME & LOCATION) B2SC J. J. Roder

DATE : February 24, 1972

SUBJECT : Trip Report

REFERENCE :

TO : C. PATON

cc: B2SC D. E. Roush
→ B2SD ~~P. W. Gamm~~
1010 E. L. Shimley
1320 G. F. Fague

COMPANY CONTACTED: General Tire & Rubber Company
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will have 516 G.F.P. Tank.

*Plan to convert all
remaining centrifugal pumps
to can pumps next year*

REC'D FEB 25 1972

GEN 000380

*DED
3/16/72*

Another area of concern regarding fire hazard is in the vicinity of calendars where the large rotary joints and flexible hoses have a tendency to leak. This would not be a particular problem. However, each of the calendar rolls appears to be equipped with radiant heat located beneath the rolls which could be a source of ignition should either a hose or a rotary joint fail. Steam snuffers have already been installed at these locations and hopefully this would extinguish a fire should it occur.

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Jeanette, Pa.

Action Required

Roder to confirm by letter to Bob Ransford with copy to John Crozier regarding the details of our meeting including pricing information on Therminol 55.

J. J. Roder
J. J. Roder

CS

GEN 000381

about cleaned out,
Not a new dress -
Broke in a line,
In time - believe.

Seal went out person
sent to sewer.

Refer to W. B. Pappas

Richard Mitchell
works in Captain of the Port Office.

Captain of the Port Office

Room 501

Federal Building

234 Summit St.

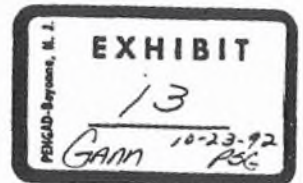
Toledo, Ohio 43604

Some one reported spill - little pennies,
Good spot; Ottawa river, 10; caught in a net
Sagel up with 11.11.11

East Street got into oil strong
solution control units watched
over the camp.

Dispatch of cars.

Gen. line taking care of clean.
into a car in dirt.



GEN 000520

Gann 10-23-92
PAC

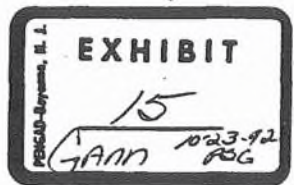
STATUS

1. Customer GENERAL TIRE & RUBBER Major FR User
MICC Bus. Grp.
Other MC
2. Address Toledo, Ohio
(FR Location)
3. Other Locations Using FR: Yes ☒ No ☐
4. Prior Experience: T-55 ☐ T-66 ☐ Other ☐
5. Other Locations Converted from FR: Yes ☒ No ☐
6. Any Conversion Attempts by Monsanto: Yes ☒ No ☐
7. Any Conversion Inducements: Yes ☒ No ☐ (?)
8. If Yes to 6 or 7, give details and status _____
9. Applications for FR (Details) MAIN SOURCE OF FR IN 400'S
SUPPLIES THERMAL TO SEVERAL TEMPERED LINES FOR STEEL
10. FR System(s) FR1 Volume (gal.) 2500 Max. Op. Temp (°F) 250°F
11. Any System Peculiarities or Precautions (SYSTEM ALSO HAS HIGH SAL THERMAL & STG. TK)
12. Likely Replacement: T-55 ☒ T-66 ☐ Other ☐
13. Sales History
- | | <u>1968</u> | <u>1969</u> | <u>1970</u> | <u>1971</u> | <u>Date of last order</u> | <u>Volume of last order</u> |
|--------------------------|-------------|-------------|---------------|-------------|---------------------------|-----------------------------|
| Total Volume Orders/Year | | | <u>72,900</u> | <u>2400</u> | <u>Nov. 1971</u> | <u>2400</u> |
14. Key Personnel (address/title/phone)

→ BOB RANSFORD - MAINTENANCE Supt. - 419-729-3

GEN 000510

9-13-72



Bob Ranford
Ten time tested

Planning to remove FR and conduct analysis. Unit

10 hr 7-55)
HCS 6-81

Got a leak in system
^{5 quarts per}
^{1st part of} constant just 10 min of - 5 on < 1000 pt FR

^{then}
Immediately reduced 3000 pt off 681;
still had 1000 pt FR

Mechanist seal leak
Blocking flow of fluid into the
seal of rotary joints

No inert gas on exposure. Tank.

System down - some work and it again.

Issue: to remove sludge

Partial Steam / Heat

edge tends to collect around air
top insulation: rotary joints, welds.

Each loop is a semi closed circuit

Because they way they are set up; small flow
in that system.

GEN 000526

Pump out circulation tank, enough to
allow 1000 gal of new MCS-681

will gain the whole system -
(Full flow filter are connecting)

(Out cow tank)

Partial flow.

Down against against moisture.
dry low pipe filling

(Wants ~~sewer~~ into on the blanket)

Jeanette & Lawrence
↑ probably

~~He~~ ~~proposed~~

GEN 000527

1. 5-yr. drain, full income
 H M C S 581
 A. 2 on do on solo fly.

earliest possible

Send for T O A - 1. to Bob

Dec. 15, 1971 - Howard J. Jones
 Dec 25, 1971 - Peter Salt

Some you stop,
 etc. when you finish

We have no additional
 report upon mechanical action
 to break down -

GEN 000528

If slightly lubricate,

If too dry —
will tear up.

Not char in literature
but this will happen

Have 4000 gal tank —
will order 3000 gal 7-55

GEN 000529

FROM

SHIP TO

MONSANTO COMPANY
Department 246
SAUGET, ILLINOIS 62201

RETURNED

for Reclamation

or

Disposal only.

This product contains polychlorinated biphenyls, which some studies have shown may be an environmental contaminant. Extreme care should be taken to prevent any entry into the environment through spills, leakage, use, disposal, vaporization or otherwise.

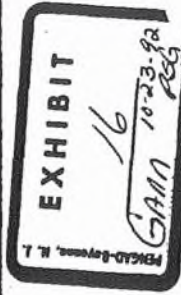
PRODUCT NAME

WEIGHT

CAUTION: Contains chlorinated hydrocarbons. Avoid prolonged breathing of vapors or mists. Avoid contact with eyes or prolonged contact with skin. If skin contact occurs, remove by washing with soap and water. Following eye contact flush with water. If clothing becomes soaked with fluid, launder before wearing again.

1068753

GEN 000457



Therminol® FR-I

HEAT TRANSFER MEDIUM BY

Monsanto



ATTENTION

DO NOT USE IN ANY SYSTEM INVOLVING
PROCESSING OR HANDLING OF:

Food or food related products;
Food wrapping or container materials;
Pharmaceuticals or
Animal feed stuffs.

ANY CONTACT MAY CONTAMINATE
THESE ITEMS TO THE EXTENT
THEY MUST BE DESTROYED.

CAUTION!

CONTAINS CHLORINATED
HYDROCARBONS

Avoid prolonged breathing of vapors
or mists.

Avoid contact with eyes or prolonged
contact with skin.

If skin contact occurs, remove by
washing with soap and water.
Following eye contact flush with water.

If clothing becomes soaked with fluid,
launder before wearing again.

This product contains polychlorinated biphenyls,
which some studies have shown may be persistent,
an environmental contaminant and, possibly, in-
jurious to certain forms of bird, aquatic and animal
life. Extreme care should be taken to prevent any
entry into the environment through spills, leakage,
use, disposal, vaporization or otherwise.

WASTE DISPOSAL

Used polychlorinated biphenyl fluids may be re-
turned freight prepaid for proper incineration at
3¢ per pound.

Ship to: Supervisor Dept. A-246
MONSANTO COMPANY
SAUGET, ILLINOIS 62201

GEN 000039

OT NO.



NET
LEGAL

600 LB. 272.16

TARE 48 LB. 21.77 KG.
GROSS 648 LB. 293.93 KG.

PACKER

MONSANTO COMPANY, ST LOUIS, MISSOURI 63166, U.S.A.

811.01-245.11/53

ionsanto

FILE NAME & LOCATION: B2SD - P. W. Gann

March 10, 1972

Therminol FR Conversion Project
Week of March 7, 1972

C. Paton

cc B2SL - T. L. Gossage
B2NK - W. B. Papageorge
B2SF - N. T. Johnson
B2SC - J. J. Roder
B2SC - D. E. Roush
1070 - H. R. Ford
1800 - D. R. Hansen
1010 - E. L. Shimley
1650 - P. L. Slayton
1460 - D. W. Stegen
FMC/DED/RLN/OSR

I. Project Status

This Week

1972
Cumulative

A. Commitments to Convert

1.

B. Actual Conversions

C. Customers Lost

1.

D. New Potential Losses for 1972

1.

2.

E. New Refusals



GEN 000417

E. New Refusals (Continued)

5. Metalurigical Int'l., Inc., New Shrewsbury, N. J. Urgent request for 2 drums FR-1 was refused. Customer claims needed to start-up \$1.5 M facility. Customer called Kawecki Berylco in an attempt to recall 2 drums from our Elizabeth warehouse which Kawecki had shipped March 3, 1972. Kawecki's request was also refused.

6.

7.

F. New Delays

None.

G. Major Complaints

1.

2.

H. Old Unreported Losses

None.

GEN 000418

I. Once Through Situations "No Conversion Potential"

1.

2.

3.

4.

J. Special Situations

1.

2.

3.

4.

5.

J. Special Situations (Continued)

6.

7.

8.

9.

10.

11.

12.

II. Activity

- A. Conversion Team, this week's new contacts at 50.
- C. Effective March 7, 1972 a xerox copy of the Wall Street Journal (March 6, 1972) article on FDA's proposal for PCB limitation in the food industry is enclosed in all initial team letters to customers.
- D. Sauget incinerator expected on stream during day of 3-10-72 after being down most of past 5-6 weeks. 14,000 gallon storage currently available for tanktruck unloading. Rail cars on hold until incinerator on stream, reliability ok'd and storage tank level sufficiently low

GEN 000419

II Activity (Continued)

- E. T-55 availability is in critical short supply. The 5 Mg. to Cons. Al and 20 Mg. to Stewart Petro wipes out bulk availability for balance of month. The March 1 drum inventory of 200,000 pounds in the warehouses is all that is available until about April 10-15 when these warehouses are expected to receive new stock. At present, the conversion team continues to operate on the basis that T-55 will be made available to meet customer conversion requirements.

Note: Many customers are in the process of conversion and if they run into an emergency, needing additional T-55 (as flush or refill), it is imperative that Monsanto makes delivery.

- F. A special registered mailing completed on March 6, 1972 of C. Paton's 3-6-72 survey letter, addressed to the "Office of the President" of food related customers (copy attached).

1. U.S. customers 130 mailed
 - a. Status as of 3-10-72.
 - Signed survey letters ret'd 10
 - Green registered receipts signed and returned 71
 - b. The following are not being mailed:
 - East Coast Terminal, Wilmington, N. C.
 - West Bend, West Bend, Wis.

2. Canadian customers.

Dave Goodwillie will handle mailings to Canadian customers.

P. W. Gann

Attachment

/kl

GEN 000420

FDA to Propose Tighter Limits on PCBs In Effort to Cut Potential Health Hazard

By JONATHAN SPIVAK

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON — The Food and Drug Administration soon will propose significant restrictions on polychlorinated biphenyls, or PCBs, an important industrial chemical deemed to pose potential health dangers.

The agency, worried about PCBs contaminating food and food packaging, intends to establish new limits on the amount of PCBs these products may contain. Moreover, to prevent such contamination, the FDA also will propose banning most industrial uses of the chemical in plants that process or make food, feed or packaging materials.

PCBs are made in the U.S. only by Monsanto Co. They are used widely in electrical equipment as heat transfer agents and in various other industrial applications because of their conducting properties and lack of flammability. However, the chemical persists in the environment after use, and high doses have damaged test animals' livers. Scientists are unsure of its risks to humans at low levels and with long-term exposure, but are eager to minimize any possible hazard.

The new FDA proposal probably will call for limits on PCBs in baby foods and poultry, as well as packaging, and reaffirm existing restrictions in other foods. The ban on food-related factory use would formalize restrictions Monsanto is applying voluntarily, so it probably won't reduce further the company's PCB sales. The restrictions would rule out the chemicals' use in heat exchangers, as a lubricant, in hydraulic fluids and for other purposes except in electrical systems where PCBs can't leak out and contaminate other materials.

Limits on Packaging

One of the chief issues is the restrictions on packaging materials and packaged food. Last fall, PCB levels ranging up to 433 parts per million were found in food packaging made from recycled paper. Much of the contamination was found to result from the chemicals' use in carbonless carbon paper, which then was recycled into packaging materials. This use has been discontinued. But FDA experts say PCB levels ranging up to 10 parts per million have been found in virgin pulp.

The FDA feared the chemical might migrate from the packaging into the foods. While the contamination level found last fall in dried foods, particularly cereals, was far lower than that in the package, FDA officials announced they would consider regulatory action.

The new proposals are expected to limit PCBs to five parts per million in any food packaging material, recycled or otherwise. Current regulations for reclaimed fibers and

packaging materials don't allow any PCBs. But this standard was set before the problem was known and hasn't been enforced. FDA officials thus were faced with either enforcing the existing total ban or establishing a new limit.

The proposed limit can be met by more careful manufacturing control and by eliminating use of some contaminated paper for recycling, FDA experts insist. The packaging limit would keep possible contamination of contained foods to a fraction of a part per million, they say.

The agency is expected to also propose a limit of 0.1 part per million in infant food. "Infants take in more food per unit of weight and are also more sensitive," argues one official.

Tougher Poultry Ruling

An existing administrative restriction of five parts per million for poultry will be tightened to make it five parts per million in the fat rather than the whole bird. This change effectively would decrease the permitted levels as much as 10 times, agency experts explain. It would mean that when accidental contamination of turkeys and chickens occurs, usually through PCBs finding their way into feeds, many more birds would be seized and destroyed by federal officials.

Existing administrative restrictions of five parts per million in fish and 0.5 parts in eggs would be continued as formal regulations, while a limit of 0.2 parts per million in milk could be toughened.

These proposals still need final review by Charles Edwards, FDA Commissioner, but the agency's course appears clear. The proposed restrictions would be issued initially for a 60-day comment period and then would be republished, probably to take effect immediately.

When concern with PCB contamination mounted, Monsanto voluntarily restricted its use. The company no longer sells it for applications where it can escape into the environment. But the FDA insists Monsanto's PCB sales in the U.S. already have been reduced about as much as they will be.

The regulations primarily would affect makers and users of packaging materials. FDA officials argue the packaging industry can meet the five-part-per-million restriction with sufficient care, and it will provide adequate public protection. "When people are watching it (PCB contamination) it can be kept below five parts per million," argues one federal official. The agency insists that if the restriction were set below five parts per million the packaging companies couldn't meet it. Moreover, it's at that level that the problem of transfer to foods first becomes apparent.

REPORTERS PAPER & MFG. CO., LOUISVILLE, KY.

[illegible]