

DATE: January 17, 1983

cc: F.R. Johannsen
G.J. Levinskas

SUBJECT: TCDD

REFERENCE: Memo (DRB to GR), 20 Dec. 82

TO: G. Roush, Jr., M.D.
G2WG

In response to item 1 of D.R. Bishop's memo (DRB to GR, 20 Dec. 82, attachment C) a literature search was conducted by Mary Davis to identify synthetic substances which have some evidence of toxicity at doses comparable to 2,3,7,8-TCDD. In reviewing the 295 citations produced, a toxic response level of 0-10 parts per billion (ppb) was chosen as the range of toxicity for identifying such substances. Attachment A lists the single commercial synthetic substance and several naturally occurring substances which fell into the above category.

With regard to item 2 of the memo, the melting point of 2,3,7,8-TCDD is 305°C (581°F) and no boiling has ever been reported. This fact was confirmed by F. Hileman, MAC, Dayton, and is supported by the literature references cited in attachment B.

Timothy J. Long
Timothy J. Long

dlj

attachments

CONFIDENTIAL

SUBJECT TO PROTECTIVE ORDER.

033014

Attachment A

<u>Substance</u>	<u>Toxic Effect/Specie Tested</u>	<u>Dose</u>
I. <u>Commercial Substances</u>		
Platinum (II), diammine-dichloro-,cis-	intradermal TD _{LO} */man (toxic effects upon skin)	0.04 ppb(µg/kg)
II. <u>Natural Substances</u>		
a) Botulinus toxin	oral LD50**/unspecified	0.01 ppb(µg/kg)
b) Batrachotoxinin A, 20-alpha-(2,4,5-trimethyl-1H-pyrrole-3-carboxylate)	subcutaneous LD50/mouse	1 ppb(µg/kg)
c) Castor bean, beta fraction	intraperitoneal LD50/mouse	1 ppb(µg/kg)

*TD_{LO} = the lowest dose of the substance reported to produce any toxic effect.

**LD50 = the calculated dose of the test substance which will be expected to kill 50% of a population of test animals.

Attachment B

- 1) EPA Dioxins; Industrial Environmental Research Laboratory (IERC) Cincinnati, Ohio; EPA document no. EPA-600/2/80/197, November, 1980.
- 2) Halogenated Biphenyls, Terphenyls, Naphthalenes, Dibenzodioxins and Related Products; R.D. Kimbrough (ed.), Elsevier/North-Holland Biomedical Press, New York, 1980; pg. 50.

Monsanto

FROM
(NAME-LOCATION-PHONE) D. R. Bishop - A3NB

DATE : December 20, 1982

CC:

SUBJECT : TCDD

no figure

REFERENCE :

TO : Dr. George Roush - G2WG

In your follow-up conversation with Dr. Neal, I would like to have additional information or confirmation of the following items:

1. Examples of other synthetic substances (in commerce) that are more acutely toxic (LD₅₀) to some test animals than 2,3,7,8 TCDD.
2. 2,3,7,8 TCDD has a high boiling, about 500°F.


Dan R. Bishop

DRB:ec