

nsa to

FROM
(NAME-LOCATION-PHONE)

H. M. Keating - G4WA (4-8171)

X copy
D. Metherell
FM.

April 24, 1979

cc: D. R. Bishop - A3NB
N. G. Higgins - G4NG
W. J. McCarville - A3NC
J. W. Molloy - 1740
G. Roush - A2SA
J. J. Spano - G4NH

SUBJECT : Q&A - AGENT ORANGE

REFERENCE :

TO : H. W. Curtis - 1740

In response to your early April request, a Q&A is attached for use per Dr. McCarville's memo of 4/24/79.

The one word insert in question two and the last two Q&A's on page two were subsequently added by agreement with Dr. McCarville.

If the Q&A does not satisfy your needs, please let me know.

H. M. Keating
H. M. Keating

HMK:ku
Attachment

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3anto

NAME-LOCATION-PHONE

W. J. McCarville - A3NB - 4-3257

April 24, 1979

SUBJECT

Q&A - AGENT ORANGE
W. G. KRUMMRICH PLANT

REFERENCE

Mr. D. R. Bishop
Mr. H. M. Keating - G4WA
Dr. George Roush - A2SA
Mr. M. C. Throdahl - D1D

TO

Mr. W. B. Papageorge - G4WA

Attached is a preparedness Q&A on Agent Orange for internal use at W. G. Krummrich Plant. Questions from outside should be referred to Dan Bishop or myself.



W. J. McCarville

/hmv
Attachment

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April 24, 1979

Q&A re "Agent Orange" at W GK (Internal use only)

Q: When did Monsanto make "Agent Orange" at W GK?

A: "Agent Orange", which was a mixture of the n-butyl ester of 2,4-D and the n-butyl ester of 2,4,5-T, was supplied to the U.S. Government during the period 1965 through 1968.

Q: What is the material in "Agent Orange" that is ^{most} toxic to humans?

A: An impurity in the 2,4,5-T known as 2,3,7,8-tetrachlorodibenzo p-dioxin (2,3,7,8-TCDD).

Q: How much 2,3,7,8 TCDD was in Monsanto's 2,4,5-T?

A: We don't know for sure. There are more than 20 different tetrachloro dioxins possible, all of which analyze about the same, using the techniques we had available 10 years ago, but only the 2,3,7,8 isomer has been shown to be highly toxic in animal studies.

Q: What are the long-term effects of exposure to 2,3,7,8-TCDD?

A: There are no long-term health effects known in humans, but because of some recent studies in monkeys and earlier studies in mice and rats, the government has started a study to examine human exposures.

Q: What is Monsanto doing to study workers exposed to 2,4,5-T?

A: Although we have had experience with 2,4,5-T and presumably with 2,3,7,8-TCDD at Nitro dating back to 1949, we have seen no long-term effects on health other than chloracne. Last summer we agreed to take part in an independent study of Nitro employees carried out on behalf of the World Health Organization. Nitro was chosen because exposure levels believed to be many times what would be expected in the normal production and handling of 2,4,5-T were experienced in 1949 during a process accident. Since even in the routine operations the exposure levels at the Nitro location were believed to be considerably higher than W GK, we believe it is necessary to complete this study as soon as possible. When we finish this study later in 1979, we will know whether there is any need to expand the study to W GK.

- You did expand to W GK!!

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Q: Why did Monsanto agree to the Nitro study last summer?

A: Since the Nitro experience is the oldest recorded incident involving 2,3,7,8 TCDD and since it involved the largest exposed population (228) until the Seveso, Italy, episode in 1976, and also because we had not observed any long-term effects, the WHO believed that a detailed follow-up after 30 years might provide valuable information. At the time we agreed to the Nitro study, the "Agent Orange" question had not even been raised.

Q: From the studies with monkeys, mice and rats what would you say is the possible effect on my health of my four years of exposure to contaminated 2,4,5-T?

A: The only known human effect is chloracne. The purpose of the study at Nitro is to uncover any other long-term effects.

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Q: What has been the effect so far on the exposed population at Seveso Italy?

A: The initial irritating effect caused some cases of chloracne. We are not aware of any other known effects.

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