



Diamond Shamrock produced Agent Orange in this Newark, N.J., plant until 1968.

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AGENT ORANGE DIOXIN CONTENT

	Gallons bought by U.S.	Percentage of total U.S. production	Ppm of dioxin in sample of left-over stock
Monsanto	3,561,044	27.7	7.62
Hercules	2,400,641	18.7	below 0.05
Diamond Shamrock	898,685	5.4	8.82-14.4
Dow Chemical	4,022,534	31.1	0.12-0.2
Amroyal	694,820	5.4	0.1-0.2
T.H. Agriculture	1,036,475	8.1	0.33-0.4
Thompson Chemical	333,885	2.6	2.17-0.8
Hoffman-Taft	22,440	0.2	NA
Aggrass	100,028	0.8	NA

NOTE: Results of U.S. Army tests of left-over Agent Orange after Vietnam War. NA — not available for testing.

SOURCE: U.S. Army

The company also sought to encourage the rest of the industry to "practice good citizenship" by cleaning up its product.

Chandler of Diamond Alkali

"It's (the lawsuit) already figured into the price of the (Diamond Shamrock) stock."

— industry analyst

wrote after the March 1965 conclave that "the purpose of the meeting was obviously designed to help us solve this problem before outsiders confuse the issue and cause us no end of grief." At the time, Diamond's 2,4,5-T pesticide sold by had the highest dioxin level — from 8 ppm to 24 ppm, Dow documents show.

Internal memos reveal that Dow was afraid herbicide customers would contract the chloracne, prompting further industry regulation. V.K. Rowe, toxicologist for Dow, wrote in a June 1965 letter to a Canadian company official that the dioxin in 2,4,5-T "is exceptionally toxic: It has a tremendous potential for producing chloracne and systemic injury."

He said that chloracne in customers should be avoided because "if this should occur, the whole 2,4,5-T industry will be hard hit,

and I would expect very restrictive legislation, either barring the material or putting very rigid controls on it. That is the main reason why we are so concerned that we clean up our house from within."

But later that year, another Dow official was concerned that the March warning had been ignored. An official at the Hercules Powder Co., another producer of Agent Orange, wrote in July 1965 that Dow was "extremely frightened that this situation could explode. They are aware that their competitors are manufacturing 2,4,5-T with alarming amounts of (dioxin), and if the government learns of this, the whole industry will suffer."

Robert Taylor, a lawyer for the veterans, contends that Dow should be held liable for its failure to turn in Diamond and other competitors in the 1960s when it knew that they were producing Agent Orange with high dioxin levels.

A memorandum by the lawyers for the veterans, quoting internal company records, says that the December 1968 batches of Agent Orange manufactured by Diamond contained more than 8 ppm. And a U.S. Army study of unused herbicide found that Diamond's Agent Orange had the highest dioxin level — from 8.62 to 14.4 ppm. The product with the next highest dioxin level was in Monsanto's, with 7.62 ppm, followed by herbicide manufactured by T.H. Agriculture and Nutrition at 0.4 ppm.

Earlier this year, the federal government paid \$33 million to buy out the residents of Times Beach, Mo., where the spraying of waste oil from another former Agent Orange plant had contaminated soil to a level of 1 ppm. The Centers for Disease Control in Atlanta considers exposures above 0.001 ppm potentially harmful.

Diamond bought the Newark plant in 1951, and by 1959, other manufacturers say, it was aware of the chloracne problem in workers. Chandler observed in his 1965 memo that Diamond chemists previously had identified dioxin as a potential chloracne cause.

Court papers show that Diamond workers in Newark long were afflicted with chloracne, a skin disease directly linked to dioxin exposure. A 1963 visit to the factory by Donald J. Birmingham and Marcus Key of the U.S. Public Health Service found that 40 of the 60 employees suffered from chloracne and that cases had been observed as early as 1951.

The pair wrote that the employees were rotated in their jobs to avoid exposure to "hot spots" in which chemical vapors escaped.

Iris Blumenau, a nurse who accompanied Dr. Jacob Bleiberg on his weekly trips to treat the Newark workers, said: "I specifically remember Dr. Bleiberg saying to them, 'Why the hell do you keep doing this? This will kill you.' But they said, 'Jake, I can make twice as much here as at any other job.' Bleiberg later published a paper identifying several cases of liver disease at the plant.

The conclusion was questioned by a 1969 study that said that Diamond workers were not suffering from liver problems.