PB91-185199

NIOSH Dioxin Registry Site Visit Report
of
Givaudan Corporation
Clifton, New Jersey

Site Visit Dates
June 20, 1983, June 11, 1984,
August 25, 1986, and September 8, 1986

Report Written by:
Laurie Piacitelli
David Marlow
Marilyn A. Fingerhut

Date of Report:
December, 1990

Report Number:
117.22

Industrial Hygiene Section
Industrywide Studies Branch
Division of Surveillance, Hazard Evaluations and Field Studies
National Institute for Occupational Safety and Health
Centers for Disease Control
Cincinnati, Ohio

BBD 000001

INTRODUCTION

The National Institute for Occupational Safety and Health (NIOSH), Division of Surveillance, Hazard Evaluations and Field Studies (DSHEFS), Industrywide Studies Branch (IWSB), is conducting an investigation of health effects resulting from occupational exposure to polychlorinated dibenzo-p-dioxins (PCDD) and in particular the 2,3,7,8-tetrachlorodibenzo-p-dioxin isomer (2,3,7,8-TCDD). The NIOSH Dioxin Registry is a compilation of demographic and work history information for all U.S. production workers who have synthesized products known to have been contaminated with 2,3,7,8-TCDD or hexachlorodibenzo-p-dioxins (HxCDD).

The Registry, initiated in 1979, was prompted by animal studies showing 2,3,7,8-TCDD to be acutely toxic and a chloracnegen, as well as a carcinogen and teratogen.[1-7] 2,3,7,8-TCDD is a contaminant found in 2,4,5-trichlorophenol (2,4,5-TCP) and/or its sodium salt, which are raw materials used to produce chemical compounds such as 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and 2,2'-methylene-bis (3,4,6-trichlorophenol) hexachlorophene (HCP). Currently, there are 14 production facilities and approximately 7000 workers included in the Registry. The first use of this information is a mortality study for which the comparison group is the U.S. male population. This study will evaluate the causes of death among workers exposed to products contaminated with 2,3,7,8-TCDD and/or HxCDD.

The Givaudan Corporation has a plant in Clifton, New Jersey which produced 2,4,5-trichlorophenol from 1945 to 1949 and hexachlorophene from 1945 to 1984. Presented is a compilation of information and data from documents received from the Givaudan Corporation and from site visits conducted June 20, 1983, June 11, 1984, August 25, 1986, and September 8, 1986.

BACKGROUND

The Givaudan Corporation has operated the Clifton facility since 1924, producing flavors, fragrances, aroma chemicals, and other organic chemicals as additives for fragrances used in soaps, cosmetics, and other consumer products. Production of chemicals of interest to the NIOSH Dioxin Registry began in 1945 with the start of the 2,4,5-TCP and HCP processes. 2,4,5-TCP was produced until 1949 for use as a feedstock for the HCP process. After 1949, the 2,4,5-TCP process was shut down and purified (distilled) 2,4,5-TCP was purchased from the suppliers in Table 1. Hexachlorophene or G-11® as it was known commercially was produced until May 1984. Except for the change from on-site processing of 2,4,5-TCP to purchasing purified 2,4,5-TCP from suppliers, Givaudan made no major changes in the HCP production process. The HCP process line was dedicated solely to the production of HCP. No major accidents involving 2,4,5-TCP or HCP production occurred during their years of operation.

A layout of the plant is shown in Figure 1. HCP was produced in Buildings 58, 59, and 60, was ground in Building 47 and then packaged in Building 75. The