

#### 4. PRODUCTION, IMPORT, USE, AND DISPOSAL

##### 4.1 PRODUCTION

1,3-Dichloropropene is produced by either high-temperature chlorination of propylene or from 1,3-dichloro-2-propanol by dehydration with  $\text{POCl}_3$  or  $\text{P}_2\text{O}_5$  in benzene. All commercial preparations of 1,3-dichloropropene are mixtures of the cis- and trans- isomers. Before 1978, approximately 25 million kilograms of 1,3-dichloropropene were produced annually in the United States. Over 1 million kilograms of pesticides containing 1,3-dichloropropene were used in California alone in 1978. Recent production data are proprietary and are not available (Yang 1986).

According to USITC (1989) and SRI (1989), Dow Chemical is the only current manufacturer of 1,3-dichloropropene. It is produced under the trade name Telone II® in Freeport, Texas.

Production of Telone II®, which is 92% 1,3-dichloropropene, most likely has increased in recent years because of a 1983 suspension by EPA on the use of ethylene dibromide (EDB). Since the suspension, Telone II® and methyl bromide have become the major substitutes for EDB (Yang 1986).

##### 4.2 IMPORT/EXPORT

Import and export data for 1,3-dichloropropene were not located in the literature.

##### 4.3 USE

1,3-Dichloropropene is the predominant component of several formulations used in agriculture as soil fumigants for parasitic nematodes (Krijgsheld and Van der Gen 1986). To date, there have been at least 10 commercial preparations of fumigants that contain 1,3-dichloropropene. The trade names of these preparations are listed in Table 3-1. Table 4-1 contains some of the reported chemical compositions of these mixtures. Some variation may exist in the composition of these products; some of these formulations are no longer being produced. However, information as to which preparations (other than Telone II®) are presently being marketed was not available. Most of these fumigants are not diluted and are applied directly to the soil of vegetable and tobacco crops (Yang 1986).

Much smaller quantities of 1,3-dichloropropene are used as solvents and chemical intermediates (Krijgsheld and Van der Gen 1986).

##### 4.4 DISPOSAL

1,3-Dichloropropene may be disposed of by using a sorbent media that is packaged in an epoxy-lined drum and placed in a Resource Conservation and Recovery Act (RCRA)-approved landfill. 1,3-Dichloropropene may also be

## 4. PRODUCTION, IMPORT, USE, AND DISPOSAL

TABLE 4-1. Reported Compositions of Commercial Products Containing 1,3-Dichloropropene

Name (synonym)	Composition	Manufacturer	Reference
Dowfume N	50:50 ratio of 1,3-dichloropropene to 1,2-dichloropropane and related C <sub>3</sub> hydrocarbons	Dow Chemical Co.	Cohen and Gilmore 1983
Vidden D	85%-93% 1,3-dichloropropene 25% 1,2-dichloropropane and related C <sub>3</sub> hydrocarbons	Dow Chemical Co.	Cohen et al. 1983
Telone <sup>•</sup>	40.2% cis; 38.2% trans (NOS)	Dow Chemical Co.	Til et al. 1973
Telone II <sup>•</sup>	48%-53% cis 42%-45% trans; 1% epichlorohydrin 5% mixture of chlorinated propenes and hexenes	Dow Chemical Co.	Stott et al. 1988; Streeter et al. 1987; Yang 1986
Telone II <sup>•</sup>	48%-53% cis 42%-45% trans 2% epoxidized soybean oil	Dow Chemical Co.	Lomax et al. 1988 Breslin et al. 1989
M-3993	Same as Telone II		Lichy and Olson 1975
Telone C-17 <sup>•</sup>	40%-41% cis 38%-39% trans 19%-21% chloropicrin	Dow Chemical Co.	Mizzell et al. 1988 Streeter and Lomax 1988
DD <sup>•</sup> (Nemafene)	25%-28% cis 25%-27% trans 25%-29% 1,2-dichloropropane minor components: 3,3-dichloropropene 2,2-dichloropropene other related chlorinated hydrocarbons	Shell Chemical Co.	Parker et al. 1982 Linnett et al. 1988 Yang 1986
DD-92 <sup>•</sup>	92% cis/trans (NOS)	Shell Chemical Co.	Van Joost and de Jong 1988
Terr-O-Cide 15-D	85% DD 15% chloropicrin		Yang 1986
Terr-O-Cide 30-D	70% DD 30% chloropicrin		Yang 1986
Terr-O-Gas 57/43T	43% DD 57% chloropicrin		Yang 1986
Vorlex (Trapex, Ditrax, MENCS, MIC, MITC)	20% methylisothiocyanate 80% mixture of dichloropropenes and other related compounds		Yang 1986

NOS = not otherwise specified  
cis = cis-1,3-dichloropropene  
trans = trans-1,3-dichloropropene

## 4. PRODUCTION, IMPORT, USE, AND DISPOSAL

disposed of in a high-temperature pesticide incinerator with a hydrochloric acid scrubber (OHM/TADS 1989) and a temperature/dwell time that will completely destroy the pesticide (HSDB 1990).

