

Results of Analyses for Impurities in Pentachlorophenol

Impurity (TEF)	Mice (TR 349 NTP 1989)		Rats (TR 483 NTP 1999)
	Technical Grade	Dowicide EC-7	Pure
Dichlorophenol	--	--	NR
Trichlorophenol	0.01%	0.007%	NR
Tetrachlorophenol	3.8%	9.4%	NR
Hexachlorobenzene	50 ppm	65 ppm	113.3 ppm
Tetrachlorodibenzodioxin (1)	--	< 0.04 ppm	--
Hexachlorodibenzodioxin (0.1)	10.1 ppm	0.19 ppm	--
Heptachlorodibenzodioxin (0.01)	296 ppm	0.53 ppm	0.03 ppm
Octachlorodibenzodioxin (0.0003)	1,386 ppm	0.69 ppm	≥ 0.32 ppm
Pentachlorodibenzofuran (0.3)	1.4 ppm	--	--
Hexachlorodibenzofuran (0.1)	9.9 ppm	0.13 ppm	--
Heptachlorodibenzofuran (0.01)	88 ppm	0.15 ppm	--
Octachlorodibenzofuran (0.0003)	43 ppm	--	≥ 0.10 ppm
Heptachlorohydroxydiphenyl ether	0.11%	--	NR
Octachlorohydroxydiphenyl ether	1.91%	--	NR
Nonachlorohydroxydiphenyl ether	3.56%	--	NR
Hexachlorohydroxydibenzofuran	0.16%	--	NR
Heptachlorohydroxydibenzofuran	0.47%	--	NR
Pentachlorodibenzodioxin (1)	NR	NR	--
Tetrachlorodibenzofuran (0.1)	NR	NR	--
Pentachlorobenzene	NR	NR	17.0 ppm

Notes: 1) McConnell et al. 1991 reported impurities similar to those shown above for technical grade and Dowicide EC-7 in NTP-TR 349 (NTP 1989).

2) NR = not reported

Chemical composition of pentachlorophenol products, ppm

Component	Product						
	Technical Monsanto ^b	Technical Dow ^c	Technical Dow ^{c, f}	Technical Dow ^{d, h, i}	Technical Dow ^{e, j}	Technical Dynamit Nobel ^f	Technical Rhone-Poulenc ^g
Pentachlorophenol ^a	84.6%	88.4%	98%	90.4%	NS	87%	86%
Dichlorophenol	NS	NS	NS	NS	NS	NS	NS
Trichlorophenol	NS	< 1,000	500	< 1,000	NS	20	NS
Tetrachlorophenol	30,000	44,000	2,700	104,000	NS	50,000	70,000
Higher chlorinated phenoxyphenols	NS	62,000	5,000	NS	NS	NS	70,000
Hexachlorobenzene	NS	NS	NS	400	NS	NS	NS
2,3,7,8 TCDD)	< 0.1	< 0.05	< 0.05	< 0.05	< 0.2 ^k	< 0.001	< 0.01
Pentachloro-DD	< 0.1	NS	NS	NS	< 0.2	NS	NS
Hexachloro-DD	8	4	< 0.5	1	9	3.5	5
Heptachloro-DD	520	125	< 0.5	6.5	235	130	150
Octachloro-DD	1,380	2,500	< 1.0	15	250	600	600
Tetrachlorodibenzofuran	< 4	NS	NS	NS	< 0.2	NS	NS
Pentachloro-DF	40	NS	NS	NS	< 0.2	0.2	NS
Hexachloro-DF	90	30	< 0.5	3.4	39	10	NS
Heptachloro-DF	400	80	< 0.5	1.8	280	60	NS
Octachloro-DF	260	80	< 0.5	< 1.0	230	150	NS
Hexachlorohydroxy-DF	NS	NS	NS	NS	NS	NS	NS
Heptachlorohydroxy-DF	NS	NS	NS	NS	NS	NS	NS

NS = Not specified.

^aPentachlorophenol content expressed as percent; ^bGoldstein *et al.* 1977, as cited in WHO 1987;

^cSchwetz *et al.* 1974, as cited in WHO 1987;

^dSchwetz *et al.* 1978, as cited in WHO 1987; ^eBuser 1975, as cited in WHO 1987;

^fUmweltbundesamt 1985, as cited in WHO 1987; ^gAnon. 1983b, as cited in WHO 1987; ^hPurified;

ⁱDowicide EC – 7; ^jDowicide 7; ^k< = below detection limit.