



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

C
O
P
Y

May 23, 1974

NATIONAL CANCER INSTITUTE

Dr. Kenneth D. Johnson
Manufacturing Chemists Association
Suite 411
1825 Connecticut Avenue, N.W.
Washington, D.C. 20009

Dear Dr. Johnson:

Attached is a list of chemicals which are being assayed for carcinogenicity by the Bioassay Operations Segment of the National Cancer Institute. Please review this list and if you wish additional details on the test procedures, please provide us with a request for that information.

Thank you for your interest.

Sincerely yours,

Norbert P. Page, D.V.M.
Chief, Carcinogen Bioassay and
Program Resources Branch
Carcinogenesis, DCCP, NCI
Landow Building, Room C325

Enclosure

VVC 000006224

CHEMICALS BEING TESTED FOR CARCINOGENICITY

BY THE BIOASSAY OPERATIONS SEGMENT

CARCINOGENESIS PROGRAM, DCCP, NCI

APRIL 3, 1974

Chemicals tested in this program are selected on the basis of human exposure, production levels and chemical structure. They should not be considered as suspected carcinogens by virtue of being in the testing program.

VVC 000006225

April 3, 1974

CHEMICALS BEING TESTED FOR CARCINOGENICITY
BY CARCINOGENESIS PROGRAM, DCCP, NCI

NCI #	CHEMICAL NAME	CAS #	SEGME
C01967	ACENAPHTHENE, 5-NITRO-		BOS
C02108	ACETAMIDE	60-35-5	BOS
C04035	ACETAMIDE, N,N-DIALLYL-2-CHLORO-	93-71-0	BOS
C01887	ACETANILIDE, 3-AMINO-4-ETHOXY-		BOS
C03770	ACETANILIDE, 4'-(CHLORACETYL)-	140-49-8	BOS
C03974	ACETIC ACID, (ETHYLENEDINITRILO) TETRA, TRISODIUM SALT	150-38-9	BOS
C05447	ACETIC ACID, MERCAPTO-, MONOSODIUM SALT	367-51-1	BOS
C02540	ACETIC ACID, NICKEL(2+) SALT	373-02-4	BOS
C02766	ACETIC ACID, NITRILOTRI-	139-13-9	BOS
C01445	ACETIC ACID, NITRILOTRI-,TRISODIUM SALT	5064-31-3	BOS
C03349	ACETOHYDROXAMIC ACID, N-FLOUREN-2-YL-N-HYDROXY	53-95-2	BOS
C02755	P-ACETOPHENETIDIDE	62-44-2	BOS
C04137	ACRIDINE, 3,6-DIAMINO-, MONOHYDROCHLORIDE) -	952-23-8	BOS
C01536	ACRONYCINE	7008-42-6	BOS
C04682	ACTINOMYCIN D	50-76-0	BOS
C04002	1-ADAMANTANAMINE	768-94-5	BOS
C02095	ADIPAMIDE	628-94-4	BOS
C01514	ADRIAMYCIN		BOS
C01456	AFLATOXIN B1	1162-65-8	BOS
C00044	ALDRIN	309-00-2	BOS
C05458	N-ALLYLHYDRAZINE		BOS
C00055	AMIBEN	133-90-4	BOS
C04751	4-AMINOBIIPHENYL, 3,2'-DIMETHYL-	13394-86-0	BOS
C03419	4-AMINOBIIPHENYL, 4'-FLUOUO-		BOS
C02437	AMINOCHLORODIPHENYL ETHER		BOS
C02960	AMMONIUM, (2-CHLOROETHYL) TRIMETHYL-, CHLORIDE	999-81-5	BOS
C05469	N-AMYLHYDRAZINE		BOS
C03736	ANILINE	142-04-1	BOS
C02039	ANILINE, P-CHLORO-	106-47-8	BOS
C02255	ANILINE, 2,4-DIMETHOXY-, HYDROCHLORIDE		BOS
C02266	ANILINE, 3,4-DIMETHOXY-, HYDROCHLORIDE		BOS
C01821	ANILINE, N,N-DIMETHYL-P-NITROSO-	138-89-6	BOS
C01718	ANILINE, 4,4'-SULFONYLDI-	80-08-0	BOS
C01707	ANILINE, 4,4'-THIODI-	139-65-1	BOS
C02460	ANILINE, 2,4,6-TRICHLORO-		BOS

VVC 000006226

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C02299	ANILINE, 2,4,5-TRIMETHYL-	137-17-7	BOS
C03587	ANILINE, 2,4,5-TRIMETHYL-, HYDROCHLORIDE		BOS
C02288	ANILINE, 2,4,6-TRIMETHYL, HYDROCHLORIDE		BOS
C02993	P-ANISIDINE, 2-METHYL-	102-50-1	BOS
C01989	ANISOLE, 2, 4-DIAMINO-, SULPHATE		BOS
C03032	ANISOLE, 2,3,5,6-TETRACHLORO-4-NITRO-	2438-88-2	BOS
C01730	ANTHRANILIC ACID	118-92-3	BOS
C03510	ANTHRANILIC ACID, CINNAMYL ESTER	87-29-6	BOS
C01945	ANTHRANILIC ACID, 4-NITRO-		BOS
C01876	ANTHRAQUINONE, 2-AMINO	117-79-3	BOS
C03634	ANTHRAQUINONE, 1,4-DI-P-TOLUIDINO-	128-80-3	BOS
C03645	ANTHRAQUINONE, 1,4-DIMETHYLAMINO-	128-92-7	BOS
C01923	ANTHRAQUINONE, 2-METHYL-1-NITRO-	129-15-7	BOS
C06042	ANTI-SEBORRHEIC SHAMPOO	XX-XX-X	BOS
C02697	APC	8003-03-0	BOS
C03383	APHOXIDE	545-55-1	BOS
C04728	ARABINOSYLCYTOSINE	147-94-4	BOS
C02120	L-ARGININE GLUTAMATE	4320-30-3	BOS
C04364	ARSENIC	7440-38-2	BOS
C04104	AURAMINE	492-80-8	BOS
C06393	AVADEX	2303-16-4	BOS
C01569	5-AZACYTIDINE	320-67-2	BOS
C06371	AZIRIDINE, 2-METHYL-	75-55-8	BOS
C02926	AZOBENZENE	103-33-3	BOS
C00431	BAYLUSCIDE	1420-04-8	BOS
C05470	BENZALKONIUM CHLORIDE	8001-54-5	BOS
C03576	7H-BENZ(DE)ANTHRACEN-7-CNE	82-05-3	BOS
C02426	BENZENE, 1-CHLORO-2,4-DINITRO-	97-00-7	BOS
C02404	BENZENE, 1-CHLORO-4-NITRO-	100-00-5	BOS
C00419	BENZENE, PENTACHLORONITRO-	82-68-8	BOS
C04115	BENZHYDROL, 4,4'-BIS(DIMETHYLAMINO)-	119-58-4	BOS
C03361	BENZIDINE	92-87-5	BOS
C01912	BENZIMIDAZOLE, 6-NITRO-	94-52-0	BOS
C05481	BENZOIC ACID, P-AMINO	150-13-0	BOS
C05492	BENZOIC ACID, SODIUM SALT	532-32-1	BOS

VVC 000006227

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C05505	BENZOPHENONE	119-61-9	BOS
C02006	BENZOPHENONE, 4,4'-BIS (DIMETHYLAMINO) -	90-94-8	BOS
C00282	BENZO (A) PYRENE	50-32-8	BOS
C03850	P-BENZOQUINONE, DIOXIME	105-11-3	BOS
C03521	1H-BENZOTRIAZOLE	95-14-7	BOS
C05516	BENZOYLHYDRAZINE	613-94-5	BOS
C05538	BENZYLHYDRAZINE DIHYDROCHLORIDE	1073-62-7	BOS
C01741	BIGUANIDE, 1-PHENETHYL-	114-86-3	BOS
C02664	BIPHENYL, CHLORO	1336-36-3	BOS
C01525	BLEOMYCIN	11056-06-7	BOS
C01592	1,4-BUTANEDIOL, DIMETHANESULFONATE	55-98-1	BOS
C01434	1-BUTANOL, 4-(BUTYLNITROSAMINO) -	3817-11-6	BOS
C05549	N-BUTYLHYDRAZINE HYDROCHLORIDE	7400-27-3	BOS
C02131	N-BUTYLUREA		BOS
C06188	BUTYRIC ACID, BENZYL ESTER	103-37-7	BOS
C03485	BUTYRIC ACID, 4-(P-(BIS (2-CHLOROETHYL) AMINO) PHENYL) -	305-03-3	BOS
C02528	CADMIUM	7440-43-9	BOS
C02573	CADMIUM CHLORIDE	10108-64-2	BOS
C02551	CADMIUM OXIDE	1306-19-0	BOS
C02711	CADMIUM SULPHIDE	1306-23-6	BOS
C02733	CAFFEINE	58-08-2	BOS
C00691	CALCIUM CHROMATE(DUST)		BOS
C00077	CAPTAN	133-06-2	BOS
C04808	CARBANALIDE, 4,4'-DIACETYL-BIS- (AMIDINOHYDRAZONE) , DIMETHANE SULFONATE		BOS
C05550	CARBAMIC ACID, 8BUTYL ESTER	592-35-8	BOS
C02835	CARBAMIC ACID, DIMETHYLDITHIO-, SODIUM SALT	128-04-1	BOS
C00602	CARBAMIC ACID, ETHYL ESTER	51-79-6	BOS
C04024	CARBANILIC ACID, M-CHLORO-, 4-CHLORO-2-BUTYNYL ESTER	101-27-9	BOS
C01898	CARBAZOLE, 3-AMINO-9-ETHYL-	132-32-1	BOS
C03043	CARBAZOLE, 3-AMINO-9-ETHYL, HYDROCHLORIDE		BOS
C04591	CARBON DISULFIDE	75-15-0	BOS
C03452	CARBON TETRACHLORIDE	56-23-5	BOS
C06417	CARBONIC ACID, CYCLIC ETHYLENE ESTER	96-49-1	BOS
C05527	CARCINOGENIC DEOXYRIBONUCLEIC ACID		BOS
C04773	CARMUSTINE	154-93-8	BOS

VVC 000006228

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C05572	CARRAGEENAN	9000-07-1	BOS
C00099	CHLORDANE	57-74-9	BOS
C00408	CHLOROBENZILATE	510-15-6	BOS
C02686	CHLOROFORM	67-66-3	BOS
C03861	5BETA-CHOLAN-24-OIC ACID, 3-ALPHA-HYDROXY-	434-13-9	BOS
C01558	CHOLESTEROL, (P-(BIS(2-CHLOROETHYL) AMINO) PHENYL) ACETATE	3546-10-9	BOS
C03203	CHROMIC ACID(H2 CR O4), LEAD (2+) SALT (1:1)	7758-97-6	BOS
C04273	CHROMIUM	7440-47-3	BOS
C06906	CHROMIUM INDUSTRIAL RESIDUE		BOS
C00737	CHROMIUM OXIDE (CR2 O3)	1308-38-9	BOS
C06917	CHROMOMETHYL ETHER		BOS
C00680	CHRYSOPILE	12001-29-5	BOS
C00679	CIGARETTE SMOKE, TOBACCO		BOS
C06928	CIGARETTE TOBACCO TAR		BOS
C05594	CITRIC ACID	77-92-9	BOS
C05607	CITRIC ACID, SODIUM SALT	994-36-5	BOS
C07056	COAL DUST		BOS
C07067	COAL TAR	8007-45-2	BOS
C07078	COAL TAR, ACIDIC FRACTION		BOS
C07089	COAL TAR, BASIC FRACTION		BOS
C07090	COAL TAR, NEUTRAL PORTION		BOS
C04411	COBALTOCENE		BOS
C07103	COUMARIN	91-64-5	BOS
C03598	P-CRESOL, 2,6-DI-TERT-BUTYL-	128-37-0	BOS
C01467	CYCASIN	14901-08-7	BOS
C05618	CYCLAMATE, CALCIUM SALT	139-06-0	BOS
C02277	CYCLAMATE, SODIUM SALT	139-05-9	BOS
C04900	CYCLOPHOSPHAMIDE	50-18-0	BOS
C00102	DACONIL	1897-45-6	BOS
C06053	DANDRUFF CONTROL	XX-XX-X	BOS
C01683	DARAPRIM	58-14-0	BOS
C04693	DAUNOMYCIN	20830-81-3	BOS
C04933	O,P'-DDD	53-19-0	BOS
C00475	P,P'-DDD	72-54-8	BOS
C00555	DDE	3424-82-6	BOS

VVC 000006229

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C07125	N-DECANE	124-18-5	BOS
C01581	BETA-DEOXYTHIOGUANOSINE		BOS
C03269	DIARYLENIIDE YELLOW	NOCAS 0274	BOS
C05630	DIBENZ(A,H)ACRIDINE	226-36-8	BOS
C05641	DIBENZ(A,J)ACRIDINE	224-42-0	BOS
C05652	7-H-DIBENZ(C,G)CARBAZOLE	194-59-2	BOS
C03565	DIBENZO(B,DEF)CHRYSENE-7,14-DIONE	128-66-5	BOS
C03656	DIBENZO-P-DIOXIN	262-12-4	BOS
C03667	DIBENZO-P-DIOXIN, 2,7-DICHLORO-	33857-26-0	BOS
C03678	DIBENZO-P-DIOXIN, 1,2,3,4,6,7,8,9-OCTACHLORO-	3268-87-9	BOS
C03714	DIBENZO-F-DIOXIN, 2,3,7,8-TETRACHLORO-	1746-01-6	BOS
C03690	DIBENZO-P-DIOXIN, 2,3,7-TRICHLORO-	33857-28-2	BOS
C05663	DIBENZ(A,I)PYRENE		BOS
C01650	DIBENZYLAMINE,N-(2-CHLOROETHYL)	51-50-3	BOS
C01661	DIBENZYLAMINE HYDROCHLORIDE	63-92-3	BOS
C04795	DIBROMODULCITOL	10318-26-0	BOS
C04762	DIBROMOMANNITOL	488-41-5	BOS
C03270	TRIS(2,3-DIBROMOPROPYL)PHOSPHATE	126-72-7	BOS
C03430	DIBUTYLAMINE, N-NITROSO-	924-16-3	BOS
C02028	DIBUTYLIN DIACETATE	1067-33-0	BOS
C04875	DICHLOROMETHOTREXATE	528-74-5	BOS
C05049	DICYCLOHEXYLAMINE,N-NITROSO-	947-92-2	BOS
C04386	DICYCLOPENTADIENE	77-73-6	BOS
C02448	DICYCLOPENTADIENE DIOXIDE	81-21-0	BOS
C04397	DI-PI-CYCLOPENTADIENYLNICKEL		BOS
C00124	DIELDRIIN	60-57-1	BOS
C00599	DIELDRIIN,PHOTO-	13366-73-9	BOS
C00271	DIETHYLANINE,N-NITROSO-	55-18-5	BOS
C06019	N,N-DIETHYL-M-TOLUIDE	134-62-3	BOS
C04228	P,P'-DIHYDROXYBENZHYDROL		BOS
C00135	DIMETHOATE	60-51-5	BOS
C04182	P,P'-DIMETHOXYBENZHYDROL		BOS
C04193	P,P'-DIMETHOXYBENZOPHENONE	90-96-0	BOS
C04217	P,P'-DIMETHOXYBENZOPHENONE IMINE		BOS
C04206	DIMETHOXYDIPHENYLMETHANE		BOS

VVC 000006230

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C05050	DIMETHYLAMINE, N-NITROSO-	62-75-9	BOS
C03689	P-DIOXANE	123-91-1	BOS
C00395	DIOXATHION	78-34-2	BOS
C02700	DIPENTYLAMINE, N-NITROSO-	13256-06-9	BOS
C02880	DIPHENYLAMINE, N-NITROSO-	86-30-6	BOS
C02244	DIPHENYLAMINE, 4-NITROSO-	156-10-5	BOS
C04171	2-DIPHENYLMINE, 4-AMINO-		BOS
C05061	DIPROPYLAMINE, N-NITROSO-	621-64-7	BOS
C02959	DISULFIDE, BIS(DIETHYLTHIOCARBAMOYL)-	97-77-8	BOS
C03009	2,5-DITHIOBIUREA		BOS
C07147	DODECANE	112-40-3	BOS
C05674	DODECYLAMINE, N,N-DIMETHYL-, ACETATE	1920-05-4	BOS
C01605	EMETINE	483-18-1	BOS
C00157	ENDRIN	72-20-8	BOS
C01570	ESTRADIOL MUSTARD		BOS
C00522	ETHANE, 1,2-DIBROMO-	106-93-4	BOS
C04535	ETHANE, 1,1-DICHLORO-	75-34-3	BOS
C00511	ETHANE, 1,2-DICHLORO-	107-06-2	BOS
C02868	ETHANE, 1,1-DICHLORO-2,2-BIS(P-ETHYLPHENYL) -	72-56-0	BOS
C04604	ETHANE, HEXACHLORO-	67-72-1	BOS
C03554	ETHANE, 1,1,2,2,-TETRACHLORO-	79-34-5	BOS
C04626	ETHANE, 1,1,1-TRICHLORO-	71-55-6	BOS
C04579	ETHANE, 1,1,2-TRICHLORO-	79-00-5	BOS
C00464	ETHANE, 1,1,1-TRICHLORO-2,2-BIS(P-CHLOROPHENYL) -	50-29-3	BOS
C05685	ETHANOL, 2-HYDRAZINO-	109-84-2	BOS
C06406	ETHER, BIS(2-CHLOROETHYL) -	111-44-4	BOS
C03996	ETHREL		BOS
C05696	ETHYL HYDRAZINE HYDROCHLORIDE		BOS
C04580	ETHYLENE, TETRACHLORO-	127-18-4	BOS
C04546	ETHYLENE, TRICHLORO-	79-01-6	BOS
C03281	ETHYLENEDIAMINE, N-1-NAPHTHYL-, DIHYDROCHLORIDE	1465-25-4	BOS
C05709	ETHYLUREA	625-52-5	BOS
C04239	FERROCENE	102-54-5	BOS
C00168	GARDONA	961-11-5	BOS
C04353	GOLD	7440-57-5	BOS

VVC 000006231

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C05710	GRISEOFULVIN	126-07-8	BOS
C04819	GUANAZOLE	503-88-8	BOS
C01423	GUANIDINE, 1-METHYL-3-NITRO-1-NITROSO-	70-25-7	BOS
C00066	GUSATHION	86-50-0	BOS
C06075	HAIR SPRAY	XXX-XX-X	BOS
C00180	HEPTACHLOR	76-44-8	BOS
C02653	HEXACHLOROPHENE	70-30-4	BOS
C05094	HEXAMETHYLENEIMINE, N-NITROSO-	932-83-2	BOS
C02142	HEXANAMIDE	628-02-4	BOS
C05721	1,3-HEXANEDIOL, 2-ETHYL-	94-96-2	BOS
C03054	HYDANTOIN, 1,3-DICHLORO-5,5-DIMETHYL-	118-52-5	BOS
C04739	HYDRAZINE, 1-ACETYL-2-PICOLINOYL-	17433-31-7	BOS
C05732	HYDRAZINE, 1,1-DIMETHYL-	57-14-7	BOS
C05743	HYDRAZINE, 1,2-DIMETHYL-, DIHYDROCHLORIDE	306-37-6	BOS
C01854	HYDRAZINE, 1,1-DIPHENYL-	530-50-7	BOS
C05754	HYDRAZINE, PHENETHYL-, SULFATE (1:1)	156-51-4	BOS
C03429	HYDRAZINE, SULFATE	10034-93-2	BOS
C06382	BIS(2-HYDROXYETHYL)DITHIOCARBAMIC ACID, POTASSIUM SALT	23746-34-1	BOS
C03258	HYDROXYLAMINE, N-NITROSO-N-PHENYL-, AMMONIUM SALT	135-20-6	BOS
C05776	BETA-HYDROXYPROPYL-PROPYLNITROSAMINE		BOS
C04831	HYDROXYUREA	127-07-1	BOS
C04717	IMIDAZOLE CARBOXAMIDE, DIMETHYLTRIAZENO	4342-03-4	BOS
C04091	IMIDAZOLE-1-ETHANOL, 2-(P-FLUOROPHENYL)-5-NITRO-	4548-15-6	BOS
C01616	IMIDAZOLE MUSTARD		BOS
C03372	2-IMIDAZOLIDINETHIONE	96-45-7	BOS
C03474	IMURAN	446-86-6	BOS
C04262	IRON	7439-89-6	BOS
C06268	ISOBUTYRIC ACID, PHENETHYL ESTER	103-48-0	BOS
C02175	ISOCYANIC ACID, 3,3'-DIMETHOXY-4,4'-BIPHENYLENE ESTER	91-93-0	BOS
C05787	ISONICOTINAMIDE		BOS
C05798	ISONICOTINIC ACID	55-22-1	BOS
C05801	ISONICOTINIC ACID HYDRAZIDE	54-85-3	BOS
C01638	ISOPHOSPHAMIDE	3778-73-2	BOS
C00486	KELTHANE	115-32-2	BOS
C00191	KEPONE	143-50-0	BOS

VVC 000006232

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C01478	LASIOCARPINE	303-34-4	BOS
C04342	LEAD	7439-92-1	BOS
C03407	LEAD SUBACETATE	1335-32-6	BOS
C02891	LEDATE	19010-66-3	BOS
C03532	LEVOMINE BLUE BN-M	119-92-6	BOS
C04660	LEVOMINE RED KB-S	136-28-7	BOS
C03543	LEVOMINE RED PT-S	103-21-9	BOS
C00204	LINDANE	58-89-9	BOS
C05378	LUCANTHONE	479-50-5	BOS
C00215	MALATHION	121-75-5	BOS
C02517	MANGANESE	7439-96-5	BOS
C04488	MANGANESE ACETYLACETONATE		BOS
C03214	MANGANESE OXIDE (MN C2)	1313-13-9	BOS
C04853	MELPHALAN	148-82-3	BOS
C04944	O-MELPHALAN		BOS
C04886	6-MERCAPTOPURINE	50-44-2	BOS
C04375	MERCURY	7439-97-6	BOS
C04513	MERCURY OXIDE		BOS
C04148	METHANE, BROMO-	74-83-9	BOS
C03849	METHANESULFONIC ACID, IODO-, SODIUM SALT	126-31-8	BOS
C04637	METHANE, TRICHLOROFLUORO-	75-69-4	BOS
C00533	METHANE, TRICHLORONITRO-	76-06-2	BOS
C04568	METHANE, TRIIDO-	75-47-8	BOS
C03190	METHANSULFON-M-ANISIDE, 4'-(9-ACRIDINYLAMINO)-, MONOHYDROCHLORIDE		BOS
C04671	METHOTREXATE	59-05-2	BOS
C00497	METHOXYCHLOR	72-43-5	BOS
C07169	2-METHYLBENZ (A) ANTHRACENE		BOS
C07170	5-METHYLBENZ (A) ANTHRACENE	2319-96-2	BOS
C07181	7-METHYLBENZ (A) ANTHRACENE		BOS
C07192	8-METHYLBENZ (A) ANTHRACENE	2381-31-9	BOS
C02380	4,4'-METHYLENE-BIS-(2-CHLOROANILINE) HYDROCHLORIDE		BOS
C04499	METHYL MERCURY CHLORIDE	115-09-3	BOS
C03010	METHYL ORANGE B	547-58-0	BOS
C05118	METHYLPROPYLNITROSAMINE		BOS
C04784	METHYLTHIOINOSINE	342-69-8	BOS

VVC 000006233

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C01990	NICHLER'S HYDRIDE	101-61-1	BOS
C06428	MIREX	2385-85-5	BOS
C04706	MITOMYCIN C	50-07-7	BOS
C04331	MOLYBDENUM	7439-98-7	BOS
C02164	MORPHOLINE, 4-NITROSO	59-89-2	BOS
C05834	MYRISTIC ACID, ISOPROPYL ESTER	110-27-0	BOS
C02915	2-NAPHTHYLAMINE, N-PHENYL-	135-88-6	BOS
C03021	1,5-NAPHTHALENEDIAMINE	2243-62-1	BOS
C01956	NAPHTHALENE, 1-NITRO	86-57-7	BOS
C00351	NICKEL	7440-02-0	BOS
C04444	NICKEL COPPER ALLOY		BOS
C04422	NICKEL IRON ALLOY		BOS
C04433	NICKEL IRON MOLYBDENUM ALLOY		BOS
C04466	NICKEL ISODECYLORTHOPHOSPHATE		BOS
C04455	NICKEL TITANATE		BOS
C05845	NICOTINAMIDE	98-92-0	BOS
C05856	NICOTINE, HYDROCHLORIDE	2820-51-1	BOS
C05867	NICOTINIC ACID	59-67-6	BOS
C04080	NICOTINIC ACID, 2-(3-CHLORO-O-TOLUIDINO) -	17737-65-4	BOS
C04046	NITRALIN	4726-14-1	BOS
C00420	NITROFEN	1836-75-5	BOS
C05141	NITROSODIHYDROURACIL		BOS
C05152	NITROSOETHYLURETHAN	614-95-9	BOS
C05163	NITROSOGUVACOLINE		BOS
C05174	NITROSOMETHYLDODECYLAMINE		BOS
C05185	NITROSOMETHYLPHENIDATE		BOS
C05196	NITROSOPHENMETRAZINE		BOS
C04740	1-NITROSUREA, 1-(2-CHLOROETHYL) 3-CYCLOHEXYL	13010-47-4	BOS
C02084	NITROUS ACID, SODIUM SALT	7632-00-0	BOS
C03952	NORPHENAZONE	89-25-8	BOS
C05878	ORNITHINE, N5-CARBAMOYL-, L-	372-75-8	BOS
C06439	OXAMIDE, DITHIO-	79-40-3	BOS
C03350	1, 2 OXATHIOLANE, 2,2-DIOXIDE	1120-71-4	BOS
C03394	2-OXETANONE	57-57-8	BOS
C04126	2-OXETANONE, 3,3-DIMETHYL-	1955-45-9	BOS

VVC 000006234

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C04068	OXYCARBOXINE	5289-88-1	BOS
C05889	BETA-OXYPROPYL-PROPYLNITROSAMINE		BOS
C00226	PACAMIDON	56-38-2	BOS
C01796	PHENANTHRIDINIUM, 3,8-DIAMINO-5-METHYL-6-PHENYL-, BROMIDE	518-67-2	BOS
C05629	PHENETHYLAMINE, ALPHA-METHYL-, SULFATE (2:1), (+) -		BOS
C05561	PHENICARBAZIDE	103-03-7	BOS
C03963	PHENOL, 4-AMINO-2-NITRO-	119-34-6	BOS
C05903	PHENOL, P-METHOXY-	150-76-5	BOS
C02948	PHENOL, 2,2'-THIOBIS (4,6-DICHLORO) -	97-18-7	BOS
C02904	PHENOL, 2,4,6-TRICHLORO-	88-06-2	BOS
C03305	M-PHENYLENEDIAMINE, 4 CHLORO-	5131-60-2	BOS
C02482	M-PHENYLENEDIAMINE, DIHYDROCHLORIDE	541-69-5	BOS
C03292	O-PHENYLENEDIAMINE, 4-CHLORO-	95-83-0	BOS
C02493	O-PHENYLENEDIAMINE, DIHYDROCHLORIDE		BOS
C04160	O-PHENYLENEDIAMINE, N' (TRIS (HYDROXYMETHYL) METHYL) -4-NITRO-		BOS
C03941	O-PHENYLENEDIAMINE, 4-NITRO-	99-56-9	BOS
C05890	P-PHENYLENEDIAMINE	106-50-3	BOS
C03316	P-PHENYLENEDIAMINE, 2-CHLORO-	615-66-7	BOS
C03930	P-PHENYLENEDIAMINE, DIHYDROCHLORIDE	624-18-0	BOS
C04159	P-PHENYLENEDIAMINE, N', N'-BIS (2-HYDROXYETHYL) -N-METHYL-2-NITRO-		BOS
C02222	P-PHENYLENEDIAMINE, 2-NITRO-	5307-14-2	BOS
C02233	P-PHENYLENEDIAMINE, N-PHENYL-, HYDROCHLORIDE	2198-59-6	BOS
C05914	PHORBOL	17673-25-5	BOS
C05925	PHORBOL ESTER		BOS
C00588	PHOSPHAMIDON	297-94-4	BOS
C04922	PHOSPHORDIAMIDIC ACID, N,N-BIS (2-CHLOROETHYL) -N'-3-HYDROXYPROPYL-		BOS
C04922	CYCLOHEXYLAMINE SALT		BOS
C02971	PHOSPHOROTHIOIC ACID, O,O-DIMETHYL O-(P-NITROPHENYL) ESTER	298-00-0	BOS
C03612	PHTHALAMIDE	85-41-6	BOS
C05936	PHTHALAZINE, 1-HYDRAZINO-, MONOHYDROCHLORIDE	304-20-1	BOS
C03601	PHTHALIC ANHYDRIDE	85-44-9	BOS
C00237	PICLORAM	1918-02-1	BOS
C05298	PIPERIDINE, 1-NITROSO-	100-75-4	BOS
C02813	PIPERONYL BUTOXIDE	51-03-6	BOS
C02824	PIPERONYL SULFOXIDE	120-62-7	BOS

VVC 000006235

ICI #	CHEMICAL NAME	CAS #	SEGMENT
002595	POWDERED PYREX		BOS
004897	PREDNISONE	53-03-2	BOS
004079	PROPANE, 1-CHLORO-2-NITRO-	2425-66-3	BOS
000500	PROPANE, 1,2-DIDROMO-3-CHLORO-	96-12-8	BOS
006440	1,2-PROPANEDIOL, 3-CHLORO-	96-24-2	BOS
004615	PROPENE, 3-CHLORO-	107-05-1	BOS
003985	PROPENE, 1,3-DICHLORO-	542-75-6	BOS
003076	PROPIONIC ACID, 3-NITRO-	504-88-1	BOS
005958	N-PROPYLHYDRAZINE HYDROCHLORIDE		BOS
001785	PYRAZINECARBOXAMIDE	98-96-4	BOS
003907	PYRIDINE, 2-(CHLOROMETHYL)-, HYDROCHLORIDE		BOS
003838	PYRIDINE, 3-(CHLOROMETHYL)-, HYDROCHLORIDE		BOS
003509	PYRIDINEACETAMIDE, THIO-	26414-86-8	BOS
001672	PYRIDIUM	136-40-3	BOS
005969	PYROGALLOL	87-66-1	BOS
005356	PYRROLIDINE, 1-NITROSO-	930-55-2	BOS
005947	QUINOLINE, 8-((4-AMINO-1-METHYLBUTYL)AMINO)-6-METHOXY-	90-34-6	BOS
005970	RESORCINOL	108-46-3	BOS
004659	RETINOL ACETATE	127-47-9	BOS
000760	RETINOL, ALL-TRANS-	68-26-8	BOS
002506	SACCHARINE	81-07-2	BOS
006097	SACCHARIN, SODIUM	128-44-9	BOS
000362	SAFROLE	94-59-7	BOS
002744	SALICYLIC ACID ACETATE	50-78-2	BOS
004295	SELENIC ACID, MONOSODIUM SALT	10112-94-4	BOS
004308	SELENIOUS ACID(H2 SE O3), DISODIUM SALT	10102-18-8	BOS
004284	SELENIUM OXIDE (SE O2)	7446-08-4	BOS
005981	SEMICARBAZIDE, MONOHYDROCHLORIDE	563-41-7	BOS
006451	SEMICARBAZIDE, THIO	79-19-6	BOS
004057	SILANE, 2-CHLOROMETHYLALLYL-		BOS
005992	SILICONE OXIDE		BOS
004320	SILVER	7440-22-4	BOS
001503	SMOKE CONDENSATE-CIGARETTE		BOS
006462	SODIUM AZIDE	26628-22-8	BOS
006473	SODIUM SULFIDE (NAHS)	16721-80-5	BOS

VVC 000006236

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C00260	STANNANE, HYDROXYTRIPHENYL	76-87-9	BOS
C02722	STANNOUS CHLORIDE	7772-99-8	BOS
C02459	4'-STILBENAMINE, 2,5-DIMETHOXY-		BOS
C07249	STILBENE	588-59-0	BOS
C04911	STILBENE, N,N-DIMETHYL-4-AMINO-	838-95-9	BOS
C03623	STILBENE, 2,2',4,4',6,6'-HEXANITRO-	20062-22-0	BOS
C02211	STYRENE, BETA-NITRO-	102-96-5	BOS
C03827	SUCCINIC ACID, MONO(2,2-DIMETHYLHYDRAZIDE) -	1596-84-5	BOS
C02562	SULFURIC ACID, CADMIUM SALT (1:1)	10124-36-4	BOS
C06008	TALC	14807-96-6	BOS
C02857	TELLURIUM, TETRAKIS (DIMETHYLDITHIOCARBAMATO) -	30145-38-1	BOS
C07261	N-TETRADECANE		BOS
C02471	TETRAFLUORO-M-PHENYLENE DIAMINE DIHYDROCHLORIDE		BOS
C06575	1,1,3,3-TETRAMETHYL-DISILAZANE, 1,3-BIS (CHLOROMETHYL) -		BOS
C03065	THIAZOLE, 2-AMINO-5-NITRO-	121-66-4	BOS
C01809	THIAZOLE, 2-AMINO-5-SULFANYLYL-	473-30-3	BOS
C00566	THIODANE	115-29-7	BOS
C04557	THIOPHENE, 2,5-DIHYDRO-,1,1-DIOXIDE-	77-79-2	BOS
C01649	THIO TEPA	52-24-4	BOS
C04251	TITANIUM	7440-32-6	BOS
C02584	TITANIUM ACETYLACETONATE		BOS
C04240	TITANIUM OXIDE(TI O2)	13463-67-7	BOS
C04502	TITANOCENE DICHLORIDE		BOS
C01810	P-TOLUAMIDE, N-ISOPROPYL-ALPHA-(2-METHYLHYDRAZINO) -, MONOHYDROCHLORIDE	366-70-1	BOS
C02302	TOLUENE-2,4-DIAMINE	95-80-7	BOS
C01832	TOLUENE-2,5-DIAMINE, SULFATE	6369-59-1	BOS
C01865	TOLUENE, 2,4-DINITRO-	121-14-2	BOS
C02346	M-TOLUIDINE HYDROCHLORIDE		BOS
C02051	O-TOLUIDINE, 5-CHLORO-	95-79-4	BOS
C02368	O-TOLUIDINE, 4-CHLORO-, HYDROCHLORIDE	3165-93-3	BOS
C02335	O-TOLUIDINE, HYDROCHLORIDE	636-21-5	BOS
C01843	O-TOLUIDINE, 5-NITRO-	99-55-8	BOS
C06020	O-TOLUIDINE, 4-(O-TOLYLAZO) -	97-56-3	BOS
C02040	P-TOLUIDINE, 3-CHLORO	95-74-9	BOS
C02357	P-TOLUIDINE, HYDROCHLORIDE	540-23-8	BOS

VVC 000006237

NCI #	CHEMICAL NAME	CAS #	SEGMENT
C02153	P-TOLYLUREA		BOS
C00259	TOXAPHENE	1319-80-8	BOS
C03441	TRIAZENE, 3,3-DIMETHYL-1-PHENYL-	7227-91-0	BOS
C02391	S-TRIAZINE, 2,4-DIAMINO-6-PHENYL-	91-76-9	BOS
C00373	S-TRIAZOLE, 3-AMINO-	61-82-5	BOS
C00442	TRIFLURALIN	1582-09-8	BOS
C03781	TRIMETHYL PHOSPHATE		BOS
C01729	TRYPTOPHAN, L-	73-22-3	BOS
C04820	URACIL MUSTARD	66-75-1	BOS
C01490	URACIL, 2-THIO	141-90-2	BOS
C02119	UREA	57-13-6	BOS
C03247	UREA, 1-(P-ACETYLPHENYL) SULFONYL)-3-CYCLOHEXYL-	968-81-0	BOS
C03805	UREA, (2-BROMO-2-ETHYLBUTYRYL) -	77-65-6	BOS
C01763	UREA, 1-BUTYL-3-(P-TOLYLSULFONYL) -	64-77-7	BOS
C02846	UREA, 3-(P-CHLOROPHENYL)-1,1-DIMETHYL-	150-68-5	BOS
C01752	UREA, 1-((P-CHLOROPHENYL) SULFONYL) -3-PROPYL-	94-20-2	BOS
C01774	UREA, 1-CYCLOHEXYL-3-(4-METHYLMETANILYL) -	565-33-3	BOS
C04524	UREA, N,N'-DICYCLOTHIO-	1212-29-9	BOS
C03816	UREA, 1,3-DIETHYL-2-THIO-	105-55-5	BOS
C02073	UREA, (P-ETHOXYPHENYL) -	150-69-6	BOS
C03792	UREA, 1-ETHYL-3-(5-NITRO-2-THIAZOLYL) -	139-94-6	BOS
C03327	UREA, 1-(HEXAHYDRO-1H-AZEPIN-1-YL) -3-(P-TOLYLSULFONYL) -	1156-19-0	BOS
C02777	UREA, 1-METHYL-1-NITROSO-	684-93-5	BOS
C02017	UREA, 1-PHENYL-2-THIO-	103-85-5	BOS
C02186	UREA, 1,1,3 TRIMETHYL-2-THIO-	2489-77-2	BOS
C03883	URIDINE, 5-BROMO-2'-DEOXY-	59-14-3	BOS
C03894	URIDINE, 2'-DEOXY-5-FLUORO-	50-91-9	BOS
C03872	URIDINE, 2'-DEOXY-5-iodo-	54-42-2	BOS
C04319	VANADIUM	7440-62-2	BOS
C00113	VAPONA	62-73-7	BOS
C00453	VEGADEX	95-06-7	BOS
C04842	VINBLASTINE	865-21-4	BOS
C04864	VINCRIStINE	57-22-7	BOS
C06484	VINYLENE CARBONATE		BOS
C04013	VITAVEX	5234-68-4	BOS

VVC 000006238

NCI #	CHEMICAL NAME	CAS #	SEGMENT
E00646	X OR GAMMA RADIATION		BOS
C06031	XENON	7440-63-3	BOS
C02313	2,4-XYLIDINE HYDROCHLORIDE		BOS
C02324	2,5-XYLIDINE HYDROCHLORIDE		BOS
C00544	ZECTRAN	315-18-4	BOS
C03929	ZINC	7440-66-6	BOS
C04477	ZINC ACETYLACETONATE		BOS
C04400	ZIRCONOCENE DICHLORIDE		BOS

VNC 000006239

NIOSH 5/24/74

CONFIRMED CASES OF LIVER ANGIOSARCOMA AMONG PVC WORKERS

COUNTRY	CASE #	BIRTH DATE	1st PVC WORK	DX ANGIO-SARCOMA	AGE AT DX	YRS 1st PVC TO DX	TOT YRS PVC	DATE OF DEATH
United States	01	00-00-22	12-09-48	03-00-71	49	22	16	03-03-73
United States	02	00-00-34	11-15-55	05-00-70	36	14	13	09-28-71
United States	03	00-00-15	11-28-45	12-00-73	58	28	28	12-10-73
United States	04	00-00-24	07-06-52	08-00-67	43	15	15	01-07-68
United States	05	00-00-12	06-19-44	04-00-64	52	20	18	04-09-64
United States	06	00-00-29	01-17-62	02-00-74	45	12	12	ALIVE
United States	07	05-03-22	08-00-44	00-00-68	45	24	18	03-23-68
United States	08	05-06-20	10-07-46	08-00-61	41	15	15	08-29-61
United States	09	00-00-31	05-28-45	03-01-74	43	29	17	ALIVE
United States	10	08-16-13	06-00-51	05-00-68	55	17	17	05-10-68
United States	11	05-27-09	10-14-46	03-00-70	61	23	23	03-16-70
United States	12	11-17-18	09-13-49	05-00-69	50	20	15	05-02-69
United States	13	12-01-21	08-19-44	05-00-74	53	30	30	ALIVE
W. Germany	01	07-26-31	10-14-57	00-00-71	40	14	14	12-14-71
W. Germany	02	06-04-30	10-01-57	00-00-69	39	11	11	01-25-69
Great Britain	01	00-00-01	00-00-46	12-00-72	71	26	20	12-00-72
Norway	01	12-23-15	03-00-50	12-20-71	56	22	21	01-04-72
Sweden	01	00-00-27	00-00-51	00-00-70	43	19	18	00-00-70
Sweden	02	00-00-11	00-00-45	00-00-72	61	27	23	00-00-72

Note: '00' indicates unknown date

VVC 00000