

Washington State Department of Ecology - Cleanup Levels and Risk Calculation (CLARC) Noncancer Critical Effects and Target Organs/Systems - February 2021

Key notes related to Noncancer Critical Effects and Target Organs/Systems are presented at the end of the table.

CAS #	Chemical Data Group	Chemical Name	S O U R C E	Noncancer Organ/System Affected Oral Ingestion Route <a href="#">see IRIS descriptions</a>	Noncancer Critical Effect Oral Ingestion Route
83-32-9	PAHs	acenaphthene	I	Hepatic	Hepatotoxicity
30560-19-1	Pesticides	acephate	O	Nervous	Inhibition of brain ChE
75-07-0	VOCs	acetaldehyde	I		
34256-82-1	Pesticides	acetochlor	I	Hematologic, Hepatic, Nervous, Reproductive, Urinary	Salivation, increased ALT and ornithine carbamyl transferase; significant increases in triglyceride and decreased blood glucose levels; histopathological changes in kidneys and testes of males
67-64-1	VOCs	acetone	I	Urinary	Nephropathy
75-05-8	VOCs	acetonitrile	I		
62476-59-9	Herbicides	acifluorfen, sodium	I	Developmental, Other, Urinary	Mortality and kidney lesions
107-02-8	VOCs	acrolein	I	Other	Decreased survival
79-06-1	VOCs	acrylamide	I	Nervous	Degenerative nerve changes
79-10-7	VOCs	acrylic acid	I	Developmental	Reduced pup weight
107-13-1	VOCs	acrylonitrile	I		
15972-60-8	Pesticides	alachlor	I	Hematologic, Other	Hemosiderosis, hemolytic anemia
116-06-3	Pesticides (Carbamate)	aldicarb	I	Nervous	Sweating as clinical sign of AChE inhibition
1646-88-4	Pesticides (Carbamate)	aldicarb sulfone	I	Nervous	Brain ChE inhibition in females
309-00-2	Pesticides	aldrin	I	Hepatic	Liver toxicity
74223-64-6	Pesticides	ally	I	Other	Decreased body weight
107-18-6	VOCs	allyl alcohol	I	Hepatic, Urinary	Impaired renal function and increased liver and kidney weights
107-05-1	VOCs	allyl chloride	I		
67485-29-4	Pesticides	amdro	O	Reproductive	Testicular effects
834-12-8	Pesticides	ametryn	I	Hepatic	Liver toxicity
33089-61-1	Pesticides	amitraz	I	Hematologic	Increased mean blood sugar concentration; slight hypothermia
7664-41-7	Nutrients	ammonia	I		
7790-98-9	Perchlorates	ammonium perchlorate	I	Endocrine	Radioactive iodide uptake inhibition (RAIU) in the thyroid
7773-06-0	Pesticides	ammonium sulfamate	I	Other	Decrease in body weight
62-53-3	SVOCs	aniline	I		
7440-36-0	Metals	antimony	I	Hematologic, Other	Longevity, blood glucose, and cholesterol
1309-64-4	Metal compounds	antimony trioxide	I		
74115-24-5	Pesticides	apollo	I	Endocrine, Hepatic	Liver effects; organ weight changes
12674-11-2	PCBs	aroclor 1016	I	Developmental	Reduced birth weights
11097-69-1	PCBs	aroclor 1254	I	Dermal, Immune, Ocular	Ocular exudate, inflamed and prominent Meibomian glands, distorted growth of finger and toe nails; decreased antibody (IgG and IgM) response to sheep erythrocytes
7440-38-2	Metals	arsenic, inorganic	I	Cardiovascular, Dermal	Hyperpigmentation, keratosis and possible vascular complications
7784-42-1	Gases	arsine	I		
1332-21-4	Fibers	asbestos	I		
76578-14-8	Pesticides	assure	I	Hepatic	Liver cell enlargement
3337-71-1	Pesticides	asulam	O	Endocrine	Changes in the adrenal medulla and in thyroid follicular cells
1912-24-9	Pesticides	atrazine	I	Other	Decreased body weight gain
65195-55-3	Pesticides	ivermectin B1	I	Developmental	Increased retinal folds in weanlings, decreased viability and lactation indices, decreased pup body weight, increase of dead pups at birth
7440-39-3	Metals	barium and compounds	I	Urinary	Nephropathy
114-26-1	Pesticides	baygon	I	Nervous	Mild cholinergic symptoms and RBD ChE inhibition
43121-43-3	Pesticides	bayleton	O	Nervous	Hyperactivity
68359-37-5	Pesticides	baythroid	I	Other, Urinary	Decreased body weights in males, inflammatory foci in kidneys of females
1861-40-1	Pesticides	benefin	O	Urinary	Histopathologic lesions in the kidney
17804-35-2	Pesticides	benomyl	I	Developmental	Decreased pup weanling weights
25057-89-0	Herbicides	bentazon	I	Hematologic	Blood loss into the gastrointestinal tract; coagulation defect in male and female dogs
100-52-7	SVOCs	benzaldehyde	I	Gastrointestinal, Urinary	Forestomach lesions, kidney toxicity
71-43-2	VOCs	benzene	I	Immune	Decreased lymphocyte count
92-87-5	SVOCs	benzidine	I	Hepatic, Nervous	Brain cell vacuolization; liver cell alterations in females
50-32-8	cPAHs	benzo[a]pyrene	I	Developmental, Immune, Reproductive	Neurobehavioral changes. Decreased thymus weight and serum IgM. Decreased ovarian follicles and ovary weight

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7440-41-7	Metals	beryllium	I	Gastrointestinal	Small intestinal lesions
91-58-7	PAHs	beta-chloronaphthalene	I	Hepatic, Other, Respiratory	Dyspnea, abnormal appearance, liver enlargement
141-66-2	Pesticides	bidrin	O	Nervous	Inhibition of brain ChE
82657-04-3	Pesticides	biphenthrin	I	Nervous	Tremors
92-52-4	PAHs	biphenyl;1,1-	I	Urinary	Renal papillary mineralization in male F344 rats
108-60-1	VOCs	bis(2-chloro-1-methyl-ethyl)ether	I	Hematologic	Decrease in hemoglobin and possible erythrocyte destruction
117-81-7	Phthalates	bis(2-ethylhexyl) phthalate	I	Hepatic	Increased relative liver weight
80-05-7	Phenols	bisphenol a	I	Other	Reduced mean body weight
7440-42-8	Metals	boron	I	Developmental	Decreased fetal weight (developmental)
15541-45-4	Pesticides	bromate	I	Urinary	Renal effects: urothelial hyperplasia
108-86-1	VOCs	bromobenzene	I	Hepatic	Hepatocellular cytomegaly in male B6CF1 mice
75-27-4	VOCs	bromodichloromethane	I	Urinary	Renal cytomegaly
593-60-2	VOCs	bromoethene	I		
75-25-2	VOCs	bromoform	I	Hepatic	Hepatic lesions
74-83-9	VOCs	bromomethane	I	Gastrointestinal	Epithelial hyperplasia of the forestomach
1689-84-5	Pesticides	bromoxynil	O	Hepatic, Hematologic, Other	Increased liver weights, decreased erythrocytes/hemoglobin/packed cell volume, increased incidences of salivation, panting, liquid feces and pale gums
1689-99-2	Pesticides	bromoxynil octanoate	O	Hepatic, Hematologic, Other	Increased liver weights, decreased erythrocytes/hemoglobin/packed cell volume, increased incidences of salivation, panting, liquid feces and pale gums
106-99-0	VOCs	butadiene;1,3-	I		
71-36-3	VOCs	butanol;n-	I	Nervous	Hypoactivity and ataxia
85-68-7	Phthalates	butyl benzyl phthalate	I	Hepatic	Significantly increased liver-to-body weight and liver-to-brain weight ratios
2008-41-5	Pesticides	butylate	I	Hepatic	Increased relative liver weight in male dogs
94-81-5	Pesticides	butyric acid;4-(2-methyl-4-chlorophenoxy)-	O	Hepatic, Urinary	Liver and kidney toxicity
7440-43-9	Metals	cadmium (potable groundwater & surface water)	I	Urinary	Significant proteinuria
7440-43-9a	Metals	cadmium (soil & nonpotable surface water)	I	Urinary	Significant proteinuria
105-60-2	SVOCs	caprolactam	I	Developmental	Reduced offspring body weight
2425-06-1	Pesticides	captafol	I	Urinary	Kidney and bladder toxicity
133-06-2	Pesticides	captan	I	Other	Decreased mean body weights
63-25-2	Pesticides (Carbamate)	carbaryl	I	Hepatic, Urinary	Kidney and liver toxicity
1563-66-2	Pesticides (Carbamate)	carbofuran	I	Nervous, Reproductive	RBC and plasma cholinesterase inhibition, and testicular and uterine effects
75-15-0	VOCs	carbon disulfide	I	Developmental	Fetal toxicity/ malformations
56-23-5	VOCs	carbon tetrachloride	I	Hepatic	Elevated serum SDH activity
55285-14-8	Pesticides	carbosulfan	I	Other	Decreased body weight
5234-68-4	Pesticides	carboxin	I	Other	Reduced weight gain, organ weight changes, increased mortality
1306-38-3	Metals	cerium oxide and cerium compounds	I		
302-17-0	VOCs	chloral hydrate	I	Gastrointestinal, Nervous	CNS depression and GI irritation in humans
133-90-4	Herbicides	chloramben	I	Hepatic	Hepatocyte degeneration
12789-03-6	Pesticides	chlordane	I	Hepatic	Hepatic necrosis
143-50-0	Pesticides	chlordecone (kepone)	I	Urinary	Renal lesions (glomerulosclerosis) in female Wistar rats
90982-32-4	Pesticides	chlorimuron-ethyl	O	Hematologic, Hepatic, Immune, Reproductive	Increased hematocrit, hemoglobin, and erythrocyte counts. Increased liver weights. Atrophy of the thymus and prostate.
506-77-4	Cyanides	chlorine cyanide	I	Endocrine, Nervous, Other	Weight loss, thyroid effects, and myelin degeneration
10049-04-4	VOCs	chlorine dioxide	I	Developmental, Nervous	Neurodevelopmental effects
7758-19-2	Nutrients	chlorite	I	Developmental, Nervous	Neurodevelopmental effects
126-99-8	VOCs	chloro-1,3-butadiene;2-	I		
532-27-4	SVOCs	chloroacetophenone;2-	I		
106-47-8	SVOCs	chloroaniline;p-	I	Immune	Nonneoplastic lesions of splenic capsule
108-90-7	VOCs	chlorobenzene	I	Hepatic	Histopathologic changes in liver

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510-15-6	Pesticides	chlorobenzilate	I	Nervous, Other	Decreased stool quantity, food consumption and body weight gains hyperirritability (maternal effects)
75-45-6	VOCs	chlorodifluoromethane	I		
67-66-3	VOCs	chloroform	I	Hepatic	Moderate/marked fatty cyst formation in the liver and elevated SGPT
74-87-3	VOCs	chloromethane	I		
95-57-8	Phenols	chlorophenol;2-	I	Reproductive	Reproductive effects
1897-45-6	Pesticides	chlorothalonil	I	Urinary	Renal tubular epithelial vacuolation
95-49-8	VOCs	chlorotoluene;o-	I	Other	Decrease in body weight gain
101-21-3	Pesticides	chlorpropham	O	Endocrine	Thyroid toxicity
64902-72-3	Pesticides	chlorsulfuron	O	Other	Decreased body weights and body weight gains.
18540-29-9	Metals	chromium (VI)	I		
544-92-3	Cyanides	copper cyanide	I	Hepatic, Other, Urinary	Decreased body and organ weights, histopathologic alterations in liver and kidney
108-39-4	Phenols	cresol;m-	I	Nervous	Decreased body weights and neurotoxicity
95-48-7	Phenols	cresol;o-	I	Nervous, Other	Decreased body weights and neurotoxicity
98-82-8	VOCs	cumene	I	Urinary	Increased average kidney weight in female rats
506-68-3	Cyanides	cyanogen bromide	I	Endocrine, Nervous, other	Weight loss, thyroid effects and myelin degeneration
110-82-7	VOCs	cyclohexane	I		
108-94-1	VOCs	cyclohexanone	I	Other	Body weight depression
108-91-8	VOCs	cyclohexylamine	I	Reproductive	Testicular damage
68085-85-8	Pesticides	cyhalothrin/karate	O	Other	Gait abnormality
52315-07-8	Pesticides	cypermethrin	O	Nervous	Decreases in motor and locomotor activity
66215-27-8	Pesticides	cyromazine	O	Other	Decreased body weight and decreased food efficiency
1861-32-1	Herbicides	dacthal	I	Endocrine, Hepatic, Ocular, Respiratory, Urinary	Effects on the lungs, liver, kidney, thyroid and thyroid hormones in males and females and eyes of females
75-99-0	Herbicides	dalapon, sodium salt	I	Urinary	Increased kidney body weight ratio
39515-41-8	Pesticides	danitol	I	Nervous	Tremors
94-82-6	Herbicides	db;2,4-	O	Other	Decreased body weight gain and food consumption
50-29-3	Pesticides	ddt	I	Hepatic	Liver lesions
1163-19-5	PBDEs	decabromodiphenyl ether	I	Nervous	Neurobehavioral effects
8065-48-3	Pesticides	demeton	I	Nervous	ChE inhibition, optic nerve degeneration
103-23-1	Phthalates	di(2-ethylhexyl)adipate	I	Developmental, Hepatic, Musculoskeletal, Other, Urinary	Changes in body weight and liver weight increased liver weight of male and female parents reduced ossification and slightly dilated ureters in fetuses reduced offspring weight gain, total litter weight, and litter size
96-12-8	Pesticides	dibromo-3-chloropropane;1,2-	I		
106-37-6	Pesticides	dibromobenzene;1,4-	I	Hepatic	Liver/body weight ratio and hepatic microsomal enzyme induction
124-48-1	VOCs	dibromochloromethane	I	Hepatic	Hepatic lesions
84-74-2	Phthalates	di-butyl phthalate	I	Other	Increased mortality
1918-00-9	Herbicides	dicamba	I	Developmental, Other	Maternal (reduced weight gain) and fetal toxicity
79-43-6	SVOCs	dichloroacetic acid	I	Hepatic, Nervous, Reproductive	Lesions observed in the testes, cerebrum, cerebellum, and liver.
106-46-7	VOCs	dichlorobenzene;1,4-	I		
75-71-8	VOCs	dichlorodifluoromethane	I	Other	Reduced body weight
75-35-4	VOCs	dichloroethylene;1,1-	I	Hepatic	Liver toxicity (fatty change)
156-59-2	VOCs	dichloroethylene;1,2-,cis	I	Urinary	Increased relative kidney weight in male rats
156-60-5	VOCs	dichloroethylene;1,2-,trans	I	Immune	Decrease in number of antibody forming cells (AFCs) against sheep red blood cells (sRBCs) in male mice
120-83-2	Phenols	dichlorophenol;2,4-	I	Immune	Decreased delayed hypersensitivity response
94-75-7	Herbicides	dichlorophenoxyacetic acid;2,4-	I	Hematologic, Hepatic, Urinary	Hematologic, hepatic and renal toxicity
78-87-5	VOCs	dichloropropane;1,2-	I		
616-23-9	SVOCs	dichloropropanol;2,3-	I	Cardiovascular, Hepatic, Urinary	Myocardial degeneration, hepatotoxicity and nephrotoxicity
542-75-6	VOCs	dichloropropene;1,3-	I	Gastrointestinal	Chronic irritation
62-73-7	Pesticides	dichlorvos	I	Nervous	Plasma and RBC ChE inhibition in males and females brain ChE inhibition in males
60-57-1	Pesticides	dieldrin	I	Hepatic	Liver lesions
84-66-2	Phthalates	diethyl phthalate	I	Other	Decreased growth rate, food consumption and altered organ weights

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43222-48-6	Pesticides	difenzoquat	O	Other	Decreases in body weight and body weight gain
35367-38-5	Pesticides	diflubenzuron	I	Hematologic	Methemoglobin and sulfhemoglobin formation
55290-64-7	Pesticides	dimethipin	O	Hepatic, Urinary, Respiratory, Reproductive, Gastrointestinal, Cardiovascular	Liver and kidney toxicity, toxicity in the lungs, testes, duodenum, glandular stomach, heart, and aortic artery
60-51-5	Pesticides	dimethoate	O	Nervous	Brain ChE inhibition
120-61-6	Phthalates	dimethyl terephthalate	I	Urinary	Chronic kidney inflammation
121-69-7	VOCs	dimethylaniline;N,N-	I	Hematologic, Immune, Other	Splenomegaly, increased splenic hemosiderosis and hematopoiesis
68-12-2	VOCs	dimethylformamide;N,N-	I		
105-67-9	Phenols	dimethylphenol;2,4-	I	Hematologic, Nervous	Clinical signs (lethargy, prostration, and ataxia) and hematological changes
576-26-1	Phenols	dimethylphenol;2,6-	I	Hepatic, Immune, Other, Urinary	Body weight changes and histopathological changes of internal organs (liver, spleen and kidneys)
95-65-8	Phenols	dimethylphenol;3,4-	I	Cardiovascular, Hepatic, Immune, Other, Urinary	Changes in blood pressure and body weight histopathological changes in liver, kidney and spleen
99-65-0	Explosives	dinitrobenzene;m-	I	Immune	Increased splenic weight
131-89-5	Phenols	dinitro-o-cyclohexyl phenol;4,6-	I	Ocular	Cataract formation
51-28-5	Phenols	dinitrophenol;2,4-	I	Ocular	Cataract formation
121-14-2	Explosives	dinitrotoluene;2,4-	I	Hematologic, Hepatic, Nervous	Neurotoxicity, Heinz bodies and biliary tract hyperplasia
88-85-7	Herbicides	dinoseb	I	Developmental	Decreased fetal weight
123-91-1	VOCs	dioxane;1,4-	I	Hepatic, Urinary	Liver and kidney toxicity
957-51-7	Pesticides	diphenamid	I	Hepatic	Liver toxicity
122-39-4	SVOCs	diphenylamine	O	Urinary, Hepatic, Immune	Increased BUN, cholesterol, total bilirubin. Increased absolute/relative kidney, liver and spleen weights.
85-00-7	Pesticides	diquat	I	Ocular	Minimal lens opacity and cataracts
298-04-4	Pesticides	disulfoton	I	Nervous	ChE inhibition, optic nerve degeneration
505-29-3	SVOCs	dithiane;1,4-	I	Nervous, Respiratory	Nasal olfactory lesions
330-54-1	Pesticides (Carbamate)	diuron	I	Hematologic	Abnormal pigments in blood
2439-10-3	Pesticides	dodine	O	Other	Change in body weight
115-29-7	Pesticides	endosulfan	I	Cardiovascular, Other, Urinary	Reduced body weight gain in males and females increased incidence of marked progressive glomerulonephrosis and blood vessel aneurysms in males
145-73-3	Herbicides	endothall	I	Gastrointestinal	Increased absolute and relative weights of stomach and small intestine
72-20-8	Pesticides	endrin	I	Hepatic, Nervous	Mild histological lesions in liver, occasional convulsions
106-89-8	VOCs	epichlorohydrin	I		
106-88-7	VOCs	epoxybutane	I		
16672-87-0	Pesticides	ethephon	I	Nervous	Plasma ChE inhibition
563-12-2	Pesticides	ethion	I	Nervous	Plasma cholinesterase inhibition
110-80-5	VOCs	ethoxyethanol;2-	I		
141-78-6	VOCs	ethyl acetate	I	Other	Mortality and body weight loss
75-00-3	VOCs	ethyl chloride	I		
759-94-4	Pesticides	ethyl dipropylthiocarbamate;S-	O	Other, Cardiovascular, Nervous	Decreased body weight, myocardial and neuromuscular lesions
60-29-7	VOCs	ethyl ether	I	Other	Depressed body weights
2104-64-5	Pesticides	ethyl p-nitrophenyl phenylphosphorothioate	I	Nervous	Neurotoxicity
100-41-4	VOCs	ethylbenzene	I	Hepatic, Urinary	Liver and kidney toxicity
106-93-4	VOCs	ethylene dibromide (EDB)	I	Endocrine, Hepatic, Reproductive	Testicular atrophy, liver peliosis, and adrenal cortical degeneration
107-21-1	VOCs	ethylene glycol	I	Urinary	Kidney toxicity
111-76-2	Glycols	ethylene glycol monobutyl ether (EGBE)	I	Hematologic	Hemosiderin deposition in the liver
96-45-7	SVOCs	ethylene thiourea	I	Endocrine	Increased incidence of thyroid hyperplasia
84-72-0	Phthalates	ethylphthalyl ethylglycolate	I	Urinary	Kidney damage and reduced lifespan
101200-48-0	Pesticides	express	I	Other, Urinary	Elevated serum bilirubin and AST levels, increased urinary volume
22224-92-6	Pesticides	fenamiphos	I	Nervous	ChE inhibition
206-44-0	PAHs	fluoranthene	I	Hepatic, Urinary	Nephropathy, increased liver weights, hematological alterations, and clinical effects
86-73-7	PAHs	fluorene	I	Hematologic	Decreased RBC, packed cell volume and hemoglobin

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16984-48-8	Nutrients	fluoride	I	Gastrointestinal	Objectionable dental fluorosis, a cosmetic effect
59756-60-4	Pesticides	fluridone	I	Ocular, Other, Reproductive, Urinary	Glomerulonephritis, atrophic testes, eye keratitis decreased body weight and organ weights
56425-91-3	Pesticides	flurprimidol	O	Hepatic	Increased incidences of focal atypia, fatty change, and hepatocellular eosinophilic change in the liver of males
66332-96-5	Pesticides	flutolanil	O	Other	Increased incidence of clinical toxic signs (vomiting, salivation, and soft stool)
69409-94-5	Pesticides	fluvalinate	I	Dermal, Other	Decreases in body weight gain increase in plantar ulcer (females)
133-07-3	Pesticides	folpet	O	Gastrointestinal	Hyperkeratosis/acanthosis and ulceration/erosion of the non-glandular stomach
72178-02-0	Pesticides	fomesafen	O	Hepatic	Hyalinization of the liver
944-22-9	Pesticides	fonofos	I	Hepatic, Nervous	Cholinesterase inhibition, cholinergic symptoms, and increased liver weight
50-00-0	VOCs	formaldehyde	I	Gastrointestinal, Other, Urinary	Reduced weight gain, histopathology in rats
39148-24-8	Pesticides	fosetyl-al	O	Reproductive	Increased incidence of testicular degeneration
110-00-9	Furans	furan	I	Hepatic	Hepatic lesions
98-01-1	VOCs	furfural	I	Hepatic	Mild hepatocellular vacuolization
77182-82-2	SVOCs	glufosinate-ammonium	O	Nervous, Cardiovascular, Developmental	Inhibition of brain glutamate synthetase, altered electrocardiogram and mortality, altered morphometrics in the offspring as adults
765-34-4	VOCs	glycidaldehyde	I	Endocrine, Hematologic, Other, Urinary	Weight gain retardation, enlarged adrenals, hydropic renal pelvis and hematopoietic effects
1071-83-6	SVOCs	glyphosate	I	Developmental, Urinary	Increased incidence of renal tubular dilation in F3b offspring
69806-40-2	Pesticides	haloxyfop-methyl	I	Reproductive, Urinary	Reduced relative kidney weights in F0, F1, and F2b adults; reduced fertility in the F1/F2b generation
79277-27-3	Pesticides	harmony	O	Other	Decreased body weight and body weight gain
76-44-8	Pesticides	heptachlor	I	Hepatic	Liver weight increases in males
1024-57-3	Pesticides	heptachlor epoxide	I	Hepatic	Increased liver-to-body weight ratio in both males and females
87-82-1	SVOCs	hexabromobenzene	I	Hepatic	Induced serum carboxylesterase activity, increased relative liver weight, increased liver porphyrins
68631-49-2	PBDEs	hexabromodiphenyl ether; 2,2',4,4',5,5'-	I	Nervous	Neurobehavioral effects
118-74-1	Pesticides	hexachlorobenzene	I	Hepatic	Liver effects
77-47-4	Pesticides	hexachlorocyclopentadiene	I	Gastrointestinal	Chronic irritation
67-72-1	VOCs	hexachloroethane	I	Urinary	Atrophy and degeneration of renal tubules
70-30-4	SVOCs	hexachlorophene	I	Gastrointestinal, Nervous	Swollen salivary glands, status spongiosis in brain and optic nerve
822-06-0	VOCs	hexamethylene diisocyanate;1,6-	I		
110-54-3	VOCs	hexane;n-	I		
591-78-6	VOCs	hexanone;2-	I	Nervous	Axonal swelling of the peripheral nerve
51235-04-2	Pesticides	hexazinone	I	Other	Decreased body weight
7647-01-0	VOCs	hydrogen chloride	I		
74-90-8	Cyanides	hydrogen cyanide	I	Reproductive	Decreased cauda epididymis weight in male F344/N rats
7783-06-4	VOCs	hydrogen sulfide	I		
35554-44-0	Pesticides	imazalil	O	Other, Hepatic	Vomiting, soft stools, decreased body weight gain, increased liver weight, increased alkaline phosphatase
81335-37-7	Pesticides	imazaquin	I	Hematologic, Hepatic, Immune, Other	Decreased body weight gain, skeletal myopathy, slight anemia, bone marrow hyperplasia, elevated serum SGOT, SGPT, CPK
36734-19-7	Pesticides	iprodisone	I	Hematologic, Reproductive	Increased RBC Heinz bodies; decreased prostate weight
78-83-1	VOCs	isobutyl alcohol	I	Nervous	Hypoactivity and ataxia
78-59-1	SVOCs	isophorone	I	Urinary	Kidney pathology
33820-53-0	Pesticides	isopropalin	I	Hematologic, Other	Reduced hemoglobin concentration, lowered hematocrits, and altered organ weights
82558-50-7	Pesticides	isoxaben	I	Cardiovascular, Hepatic, Urinary	Increased BUN; decreased serum AP and AST; decreased food consumption efficiency; increased heart/body weight
77501-63-4	Pesticides	lactofen	O	Urinary, Endocrine	Increased incidence of proteinaceous casts in the kidneys, decrease in thyroid and adrenal gland weight
58-89-9	Pesticides	lindane	I	Hepatic, Urinary	Liver and kidney toxicity
330-55-2	Pesticides (Carbamate)	linuron	O	Hematologic	Abnormal blood pigment (met- and sulfhemoglobin levels)
83055-99-6	Pesticides	londax	I	Hepatic	Liver effects
121-75-5	Pesticides	malathion	I	Nervous	RBC ChE depression

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108-31-6	SVOCs	maleic anhydride	I	Urinary	Renal lesions
123-33-1	SVOCs	maleic hydrazide	I	Urinary	Renal dysfunction
12427-38-2	Pesticides	maneb	I	Endocrine	Increased thyroid weight
7439-96-5	Metals	manganese	I	Nervous	CNS effects
24307-26-4	Pesticides	mepiquat chloride	I	Hematologic, Nervous, Other	Sedation and tonic spasms decreased food intake and body weights hematologic effects
7487-94-7	Metal compounds	mercuric chloride	I	Immune, Urinary	Autoimmune effects (autoimmune glomerulonephritis)
7439-97-6	Metals	mercury	I		
150-50-5	Pesticides	merphos	I	Nervous, Other	Ataxia, delayed neurotoxicity and weight loss
57837-19-1	Pesticides	metalaxyl	I	Hepatic	Increased serum alkaline phosphatase levels and increased liver-to-brain weight ratio
126-98-7	VOCs	methacrylonitrile	I	Hepatic	Increased SGOT and SGPT levels
10265-92-6	Pesticides	methamidophos	I	Nervous	ChE inhibition
67-56-1	VOCs	methanol	I	Developmental	Extra cervical ribs
950-37-8	Pesticides	methidathion	O	Nervous, Hepatic	Red blood cholinesterase inhibition and liver toxicity
16752-77-5	Pesticides (Carbamate)	methomyl	I	Immune, Urinary	Kidney and spleen pathology
72-43-5	Pesticides	methoxychlor	I	Developmental	Excessive loss of litters
109-86-4	VOCs	methoxyethanol;2-	I		
78-93-3	VOCs	methyl ethyl ketone	I	Developmental	Decreased pup body weight
108-10-1	VOCs	methyl isobutyl ketone	I		
22967-92-6	Metals (organometallic)	methyl mercury	I	Developmental, Nervous	Developmental neuropsychological impairment
80-62-6	VOCs	methyl methacrylate	I		
91-57-6	PAHs	methyl naphthalene;2-	I	Respiratory	Pulmonary alveolar proteinosis
298-00-0	Pesticides	methyl parathion	I	Hematologic, Nervous	RBC, ChE inhibition; reduced hemoglobin, hematocrit and RBCs
1634-04-4	VOCs	methyl tert-butyl ether (MTBE)	I		
94-74-6	Herbicides	methyl-4-chlorophenoxy-acetic acid;2-	I	Hepatic, Urinary	Kidney and liver toxicity
75-09-2	VOCs	methylene chloride	I	Hepatic	Hepatic effects (hepatic vacuolation, liver foci)
101-68-8	SVOCs	methylene diphenyl diisocyanate (MDI)	I		
51218-45-2	Pesticides	metolachlor	I	Other, Reproductive	Decreased body weight gain, decreased pup weight and parental food consumption
21087-64-9	Pesticides	metribuzin	I	Hepatic, Other, Urinary	Liver and kidney effects, decreased body weight, mortality
2385-85-5	Pesticides	mirex	I	Endocrine, Hepatic	Liver cytomegaly, fatty metamorphosis, angiectasis; thyroid cystic follicles
2212-67-1	Pesticides	molinate	I	Reproductive	Reproductive toxicity
7439-98-7	Metals	molybdenum	I	Urinary	Increased uric acid levels
300-76-5	Pesticides	naled	I	Nervous	Brain ChE inhibition
91-20-3	PAHs	naphthalene	I	Other	Decreased mean terminal body weight in males
15299-99-7	Pesticides	napropamide	O	Other, Hepatic	Decreased weight gain and increased incidence of liver lesions
7440-02-0	Metals	nickel soluble salts	I	Other	Decreased body and organ weights
14797-55-8	Nutrients	nitrate	I	Hematologic	Early clinical signs of methemoglobinemia in excess of 10% (0-3 months old infants formula)
14797-65-0	Nutrients	nitrite	I	Hematologic	Methemoglobinemia
98-95-3	Explosives	nitrobenzene	I	Hematologic	Increased methemoglobin levels
556-88-7	SVOCs	nitroguanidine	I	Developmental, Other	Reduced weight gain in female rats, maternal/ fetal toxicity in rats, and equivocal evidence of developmental toxicity in rabbits
79-46-9	VOCs	nitropropane;2-	I		
27314-13-2	Pesticides	norflurazon	O	Hepatic	Increased liver weight, increased cholesterol
85509-19-9	Herbicides	nustar	O	Hepatic, Hematologic	Increased liver weights and hypertrophy of centrilobular hepatocytes, hepatocytic vacuolation, increased alkaline phosphatase, decreased cholesterol and total serum protein, and increased white blood cells.
32536-52-0	PBDEs	octabromodiphenyl ether	I	Hepatic	Induction of hepatic enzymes; liver histopathology
2691-41-0	Explosives	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	I	Hepatic	Hepatic lesions

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19044-88-3	Pesticides	oryzalin	O	Other, hematologic, endocrine	Decreased body weight gain, decreased hematology parameters, and increased microscopic findings in the thyroid
19666-30-9	Pesticides	oxadiazon	I	Hematologic, Hepatic	Increased levels of serum proteins and increased liver weights
23135-22-0	Pesticides (Carbamate)	oxamyl	I	Other	Decreased body weight gain and food consumption
42874-03-3	Pesticides	oxyfluorfen	O	Hepatic	Liver toxicity
76738-62-0	Herbicides	paclobutrazol	I	Hepatic	Elevated liver weights, serum cholesterol, hepatic aminopyrine N-demethylase activity, and alanine transaminase levels
1910-42-5	Pesticides	Paraquat Dichloride	I	Respiratory	Chronic pneumonitis
40487-42-1	Pesticides	pendimethalin	O	Endocrine	Hormonal and histopathological changes in the thyroid
60348-60-9	PBDEs	pentabromodiphenyl ether; 2,2',4,4',5-	I	Nervous	Neurobehavioral effects
32534-81-9	PBDEs	pentabromodiphenyl ethers	I	Hepatic	Induction of hepatic enzymes
608-93-5	SVOCs	pentachlorobenzene	I	Hepatic, Urinary	Liver and kidney toxicity
82-68-8	Pesticides	pentachloronitrobenzene	I	Hepatic	Liver toxicity
87-86-5	Herbicides	pentachlorophenol	I	Hepatic	Hepatotoxicity
52645-53-1	Pesticides	permethrin	I	Hepatic	Increased liver weights
13684-63-4	Pesticides	phenmedipham	O	Hematologic, Other, Urinary	Hemolytic anemia, decreased body weight/body weight gain & food efficiency, increased renal pelvic epithelial hyperplasia and mineralization
108-95-2	Phenols	phenol	I	Other	Decreased maternal weight gain
108-45-2	SVOCs	phenylenediamine;m-	I	Hepatic	Increased relative and absolute liver weights and degenerative liver lesions
62-38-4	Metals (organometallic)	phenylmercuric acetate	I	Urinary	Renal damage
75-44-5	VOCs	phosgene	I		
732-11-6	Pesticides	phosmet	I	Hepatic, Nervous, Other	Reduced body weight (males), liver cell vacuolation, cholinesterase inhibition
7803-51-2	Gases	phosphine	I		
7664-38-2	SVOCs	phosphoric acid	I		
7723-14-0	Nonmetal inorganics	phosphorus	I	Dermal, Reproductive	Parturition mortality; forelimb hair loss
85-44-9	Phthalates	phthalic anhydride	I	Respiratory, Urinary	Lung and kidney histopathology
1918-02-1	Herbicides	picloram	I	Hepatic	Increased liver weights
29232-93-7	Pesticides	pirimiphos-methyl	O	Nervous	Plasma cholinesterase inhibition (ChEI)
67747-09-5	Pesticides	prochloraz (not in HSDB)	I	Hepatic	Increase in SAP and liver weights, liver histopathology
7287-19-6	Pesticides	prometryn	O	Hepatic, Urinary, Hematologic, Immune	Liver and kidney degeneration and bone marrow atrophy
1918-16-7	Pesticides	propachlor	I	Hepatic, Other	Decreased weight gain, food consumption increased relative liver weights
709-98-8	Pesticides	propanil	I	Immune	Increased relative spleen weight in females
2312-35-8	Pesticides	propargite	O	Other	Decreased body weight/body weight gain and increased mortality
107-19-7	VOCs	propargyl alcohol	I	Hepatic, Urinary	Renal and hepatotoxicity
139-40-2	Pesticides	propazine	I	Other	Decrease in body weight
122-42-9	Pesticides	propham	I	Immune, Nervous	Increase in male spleen weight and ChE depression in females
60207-90-1	Pesticides	propiconazole	O	Hepatic	Increased liver weight and liver lesions
123-38-6	VOCs	propionaldehyde	I		
93-65-2	Herbicides	propionic acid;(2-methyl-4-chlorophenoxy)2-	I	Urinary	Increased absolute and relative kidney weights
107-98-2	Glycols	propylene glycol monomethyl ether	I		
75-56-9	VOCs	propylene oxide	I		
81335-77-5	Pesticides	pursuit	O	Hematologic	Significant changes in the hematological parameters
51630-58-1	Pesticides	pydrin	I	Nervous	Neurological dysfunction
129-00-0	PAHs	pyrene	I	Urinary	Kidney effects (renal tubular pathology, decreased kidney weights)
110-86-1	VOCs	pyridine	I	Hepatic	Increased liver weight
121-82-4	Explosives	rdx	I	Reproductive	Inflammation of the prostate
10453-86-8	Pesticides	resmethrin	I	Reproductive	Reproductive toxicity
83-79-4	Pesticides	rotenone	I	Developmental	Reduced pup weight
78-48-8	Pesticides	s,s,s-tributylphosphorotrithioate	O	Nervous	Plasma ChE inhibition
78587-05-0	Pesticides	savey	I	Endocrine, Hematologic	Hypertrophy of adrenal cortex (both sexes) hematologic effects (males)
7783-00-8	Metal compounds	selenious acid	I	Dermal, Hematologic, Nervous	Clinical selenosis
7782-49-2	Metals	selenium and compounds	I	Dermal, Hematologic, Nervous	Clinical selenosis
74051-80-2	Pesticides	sethoxydim	O	Hepatic	Liver effects including hepatocellular hypertrophy and fatty degeneration

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7440-22-4	Metals	silver	I	Dermal	Argyria
506-64-9	Cyanides	silver cyanide	I	Endocrine, Nervous, Other	Weight loss, thyroid effects, and myelin degeneration
122-34-9	Pesticides	simazine	I	Hematologic, Other	Reduction in weight gains hematological changes in females
26628-22-8	Metal compounds	sodium azide	I	Other	Clinical sign (e.g., hunched postures) and reduced body weight
148-18-5	Metals (organometallic)	sodium diethyldithiocarbamate	I	Other	Reduced body weight
62-74-8	Metals (organometallic)	sodium fluoroacetate	I	Cardiovascular, Reproductive	Increased heart weight in females and males; decreased testis weight and altered spermatogenesis in males.
7440-24-6	Metals	strontium	I	Musculoskeletal	Rachitic bone
57-24-9	SVOCs	strychnine	I	Other	Toxicity/histopathology
100-42-5	VOCs	styrene	I	Hematologic, Hepatic	Red blood cell and liver effects
88671-89-0	Pesticides	systhane	I	Reproductive	Testicular atrophy
1746-01-6	Dioxins	TCDD;2,3,7,8- (LOW ORGANIC) (DIOXIN)	I	Developmental, Endocrine, Reproductive	Decreased sperm count and motility in men exposed to TCDD as boys / Increased TSH in neonates
34014-18-1	Pesticides	tebuthiuron	I	Other	Depressed body weight gain in F1 females
5902-51-2	Pesticides	terbacil	I	Endocrine, Hepatic	Increase in thyroid/body weight ratio; slight increase in liver weights; elevated alkaline phosphatase
886-50-0	Pesticides	terbutryn	I	Hematologic	Hematologic effects in females
5436-43-1	PBDEs	tetrabromodiphenyl ether 2,2',4,4'	I	Nervous	Neurobehavioral effects
95-94-3	SVOCs	tetrachlorobenzene;1,2,4,5-	I	Urinary	Kidney lesions
630-20-6	VOCs	tetrachloroethane;1,1,1,2-	I	Hepatic, Urinary	Mineralization of the kidneys in males, hepatic clear cell change in females
79-34-5	VOCs	tetrachloroethane;1,1,2,2-	I	Hepatic	Increased relative liver weight in rats
127-18-4	VOCs	tetrachloroethylene (PCE)	I	Nervous, Ocular	Reaction time/cognitive effects and effects to vision in occupationally-exposed adults.
58-90-2	Phenols	tetrachlorophenol;2,3,4,6-	I	Hepatic	Increased liver weights and centrilobular hypertrophy
961-11-5	Pesticides	tetrachlorvinphos	I	Hepatic, Nervous, Other, Urinary	Reduced body weight gain, increased liver and kidney weights, and RBC ChE inhibition
3689-24-5	Pesticides	tetraethyl dithiopyrophosphate	I	Nervous	Depressed RBC and plasma cholinesterase activity
78-00-2	Metals (organometallic)	tetraethyl lead	I	Hepatic, Immune	Histopathology of liver and thymus
811-97-2	VOCs	tetrafluoroethane;1,1,1,2-	I		
109-99-9	Furans	tetrahydrofuran	I	Developmental	Decreased pup body weight gain
28249-77-6	Pesticides	thiobencarb	I	Other, Urinary	Decrease in body weight, increase in BUN
23564-05-8	Pesticides	thiophanate-methyl	O	Endocrine, Other	Thyroid effects and decreased body weight
137-26-8	Pesticides	thiram	O	Hematologic, Hepatic, Other	Changes in hematology, clinical chemistry, incidences of bile duct hyperplasia, and reduction in mean body-weight
118-96-7	Explosives	tnt	I	Hepatic	Liver effects
108-88-3	VOCs	toluene	I	Urinary	Increased kidney weight
26471-62-5	VOCs	toluene diisocyanate mixture;2,4-/2,6-	I		
93-72-1	Herbicides	tp;2,4,5-	I	Hepatic	Histopathological changes in liver
66841-25-6	Pesticides	tralomethrin	I	Other	Decreased body weight gain in males increased food and water consumption in males and females
2303-17-5	Pesticides	triallate	O	Other, Endocrine	Decreased survival, decreased body weight, increased adrenal weight
82097-50-5	Pesticides	triasulfuron	I	Hepatic	Centrilobular hepatocytomegaly in males
615-54-3	VOCs	tribromobenzene;1,2,4-	I	Hepatic	Increased liver-to-body weight ratio and hepatic microsomal enzyme induction
56-35-9	Organotins	tributyltin oxide	I	Immune	Immunosuppression
76-13-1	VOCs	trichloro-1,2,2-trifluoroethane;1,1,2-	I	Nervous	Psychomotor impairment
76-03-9	SVOCs	trichloroacetic acid	I	Hepatic	Hepatocellular necrosis
120-82-1	VOCs	trichlorobenzene;1,2,4-	I	Endocrine	Increased adrenal weights; vacuolization of zona fasciculata in the cortex
71-55-6	VOCs	trichloroethane;1,1,1-	I	Other	Reduced body weight
79-00-5	VOCs	trichloroethane;1,1,2-	I	Hematologic, Immune	Clinical serum chemistry (effects on erythrocytes and depressed humoral immune status)
79-01-6	VOCs	trichloroethylene (TCE)	I	Developmental, Immune	Decreased plaque-forming cell and increased delayed-type hypersensitivity, decreased thymus weight, fetal heart malformations
75-69-4	VOCs	trichlorofluoromethane	I	Cardiovascular, Other, Respiratory	Survival and histopathology (pleuritis and pericarditis)
95-95-4	Phenols	trichlorophenol;2,4,5-	I	Hepatic, Urinary	Liver and kidney pathology
93-76-5	Herbicides	trichlorophenoxyacetic acid;2,4,5-	I	Urinary	Increased urinary coproporphyrins
598-77-6	VOCs	trichloropropane;1,1,2-	I	Endocrine, Hepatic, Urinary	Mild lesions in liver, kidney and thyroid



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96-18-4	VOCs	trichloropropane;1,2,3-	I	Hepatic	Increased absolute liver weight in male rats
58138-08-2	Pesticides	tridiphane	I	Other, Reproductive	Decreased fertility index and depressed body weight of dams
121-44-8	VOCs	triethylamine	I		
1582-09-8	Pesticides	trifluralin	I	Hematologic, Hepatic	Increased liver weights; increase in methemoglobin
526-73-8	VOCs	trimethylbenzene;1,2,3-	I	Nervous	Decreased pain sensitivity in male Wistar rats
95-63-6	VOCs	trimethylbenzene;1,2,4-	I	Nervous	Decreased pain sensitivity in male Wistar rats
108-67-8	VOCs	trimethylbenzene;1,3,5-	I	Nervous	Decreased pain sensitivity in male Wistar rats
99-35-4	Explosives	trinitrobenzene;1,3,5-	I	Hematologic	Methemoglobinemia and spleen-erythroid cell hyperplasia
unavailable12	Radionuclides	uranium, soluble salts	A	Urinary	Renal toxicity
1314-62-1	Metal compounds	vanadium pentoxide	I	Dermal	Decreased hair cystine
1929-77-7	Pesticides	vernam	I	Other	Decreased body weight
50471-44-8	Pesticides	vinclozolin	O	Respiratory, Hepatic, Reproductive, Ocular	Histopathological lesions in the lungs, liver, ovaries, eyes
108-05-4	VOCs	vinyl acetate	I		
75-01-4	VOCs	vinyl chloride	I	Hepatic	Liver cell polymorphism
81-81-2	Pesticides	warfarin	I	Hematologic	Increased prothrombin time
1330-20-7	VOCs	xylenes	I	Other	Decreased body weight, increased mortality
7440-66-6	Metals	zinc	I	Hematologic, Immune	Decreases in erythrocyte Cu, Zn-superoxide dismutase (ESOD) activity in healthy adult male and female volunteers
557-21-1	Cyanides	zinc cyanide	I	Endocrine, Nervous, Other	Weight loss, thyroid effects, and myelin degeneration
1314-84-7	Metal compounds	zinc phosphide	I	Other	Reduction of food intake and body weight
12122-67-7	Pesticides	zineb	I	Endocrine	Thyroid hyperplasia

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83-32-9	PAHs	acenaphthene	I		
30560-19-1	Pesticides	acephate	O		
75-07-0	VOCs	acetaldehyde	I	Nervous, Respiratory	Degeneration of olfactory epithelium
34256-82-1	Pesticides	acetochlor	I		
67-64-1	VOCs	acetone	I		
75-05-8	VOCs	acetonitrile	I	Other	Mortality
62476-59-9	Herbicides	acifluorfen, sodium	I		
107-02-8	VOCs	acrolein	I	Respiratory	Nasal lesions
79-06-1	VOCs	acrylamide	I	Nervous	Degenerative nerve changes
79-10-7	VOCs	acrylic acid	I	Nervous, Respiratory	Degeneration of the nasal olfactory epithelium
107-13-1	VOCs	acrylonitrile	I	Respiratory	Degeneration and inflammation of nasal respiratory epithelium; hyperplasia of mucous secreting cells
15972-60-8	Pesticides	alachlor	I		
116-06-3	Pesticides (Carbamate)	aldicarb	I		
1646-88-4	Pesticides (Carbamate)	aldicarb sulfone	I		
309-00-2	Pesticides	aldrin	I		
74223-64-6	Pesticides	allyl	I		
107-18-6	VOCs	allyl alcohol	I		
107-05-1	VOCs	allyl chloride	I	Nervous	Functional and histological peripheral neurotoxicity
67485-29-4	Pesticides	amdro	O		
834-12-8	Pesticides	ametryn	I		
33089-61-1	Pesticides	amitraz	I		
7664-41-7	Nutrients	ammonia	I	Respiratory	Decreased lung function and respiratory symptoms
7790-98-9	Perchlorates	ammonium perchlorate	I		
7773-06-0	Pesticides	ammonium sulfamate	I		
62-53-3	SVOCs	aniline	I	Hematologic	Methemoglobin increase, spleen toxicity
7440-36-0	Metals	antimony	I		
1309-64-4	Metal compounds	antimony trioxide	I	Respiratory	Pulmonary toxicity, chronic interstitial inflammation
74115-24-5	Pesticides	apollo	I		
12674-11-2	PCBs	aroclor 1016	I		
11097-69-1	PCBs	aroclor 1254	I		
7440-38-2	Metals	arsenic, inorganic	I		
7784-42-1	Gases	arsine	I	Hematologic, Immune	Increased hemolysis, abnormal RBC morphology, and increased spleen weight
1332-21-4	Fibers	asbestos	I	Respiratory	Localized pleural thickening
76578-14-8	Pesticides	assure	I		
3337-71-1	Pesticides	asulam	O		
1912-24-9	Pesticides	atrazine	I		
65195-55-3	Pesticides	avermectin B1	I		
7440-39-3	Metals	barium and compounds	I		
114-26-1	Pesticides	baygon	I		
43121-43-3	Pesticides	bayleton	O		
68359-37-5	Pesticides	baythroid	I		
1861-40-1	Pesticides	benefin	O		
17804-35-2	Pesticides	benomyl	I		
25057-89-0	Herbicides	bentazon	I		
100-52-7	SVOCs	benzaldehyde	I		
71-43-2	VOCs	benzene	I	Immune	Decreased lymphocyte count
92-87-5	SVOCs	benzidine	I		
50-32-8	cPAHs	benzo[a]pyrene	I	Developmental, Reproductive	Decreased embryo/fetal survival, Reduced ovulation rate and ovary weight

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7440-41-7	Metals	beryllium	I	Immune, Respiratory	Beryllium sensitization and progression to CBD
91-58-7	PAHs	beta-chloronaphthalene	I		
141-66-2	Pesticides	bidrin	O		
82657-04-3	Pesticides	biphenrin	I		
92-52-4	PAHs	biphenyl;1,1-	I		
108-60-1	VOCs	bis(2-chloro-1-methyl-ethyl)ether	I		
117-81-7	Phthalates	bis(2-ethylhexyl) phthalate	I		
80-05-7	Phenols	bisphenol a	I		
7440-42-8	Metals	boron	I		
15541-45-4	Pesticides	bromate	I		
108-86-1	VOCs	bromobenzene	I	Hepatic	Hepatocellular cytomegaly in female B6C3F1 mice
75-27-4	VOCs	bromodichloromethane	I		
593-60-2	VOCs	bromoethene	I	Hepatic	Hypertrophy, basophilic and eosinophilic foci, in the liver
75-25-2	VOCs	bromoform	I		
74-83-9	VOCs	bromomethane	I	Nervous, Respiratory	Degenerative and proliferative lesions of the olfactory epithelium of the nasal cavity
1689-84-5	Pesticides	bromoxnyl	O		
1689-99-2	Pesticides	bromoxnyl octanoate	O		
106-99-0	VOCs	butadiene;1,3-	I	Reproductive	Ovarian atrophy
71-36-3	VOCs	butanol;n-	I		
85-68-7	Phthalates	butyl benzyl phthalate	I		
2008-41-5	Pesticides	butylate	I		
94-81-5	Pesticides	butyric acid;4-(2-methyl-4-chlorophenoxy)-	O		
7440-43-9	Metals	cadmium (potable groundwater & surface water)	I		
7440-43-9a	Metals	cadmium (soil & nonpotable surface water)	I		
105-60-2	SVOCs	caprolactam	I		
2425-06-1	Pesticides	captafol	I		
133-06-2	Pesticides	captan	I		
63-25-2	Pesticides (Carbamate)	carbaryl	I		
1563-66-2	Pesticides (Carbamate)	carbofuran	I		
75-15-0	VOCs	carbon disulfide	I	Nervous	Peripheral nervous system dysfunction
56-23-5	VOCs	carbon tetrachloride	I	Hepatic	Fatty changes in the liver
55285-14-8	Pesticides	carbosulfan	I		
5234-68-4	Pesticides	carboxin	I		
1306-38-3	Metals	cerium oxide and cerium compounds	I	Respiratory	Increased incidence of alveolar epithelial hyperplasia in the lungs of male and female rats
302-17-0	VOCs	chloral hydrate	I		
133-90-4	Herbicides	chloramben	I		
12789-03-6	Pesticides	chlordane	I	Hepatic	Hepatic effects
143-50-0	Pesticides	chlordecone (kepone)	I		
90982-32-4	Pesticides	chlorimuron-ethyl	O		
506-77-4	Cyanides	chlorine cyanide	I		
10049-04-4	VOCs	chlorine dioxide	I	Cardiovascular, Respiratory	Vascular congestion and peribronchial edema
7758-19-2	Nutrients	chlorite	I		
126-99-8	VOCs	chloro-1,3-butadiene;2-	I	Immune, Nervous, Respiratory	Increase in incidence of olfactory atrophy, alveolar hyperplasia, and splenic hematopoietic proliferation in male F344/N rats, female F344/N rats, and female B6C3F1 mice, respectively
532-27-4	SVOCs	chloroacetophenone;2-	I	Respiratory	Squamous hyperplasia of the nasal respiratory epithelium
106-47-8	SVOCs	chloroaniline;p-	I		
108-90-7	VOCs	chlorobenzene	I		

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CAS #	Chemical Data Group	Chemical Name	S O U R C E	Noncancer Organ/System Affected Inhalation Route <a href="#">see IRIS descriptions</a>	Noncancer Critical Effect Inhalation Route
510-15-6	Pesticides	chlorobenzilate	I		
75-45-6	VOCs	chlorodifluoromethane	I	Endocrine, Urinary	Increased kidney, adrenal and pituitary weights
67-66-3	VOCs	chloroform	I		
74-87-3	VOCs	chloromethane	I	Nervous	Cerebellar lesions
95-57-8	Phenols	chlorophenol;2-	I		
1897-45-6	Pesticides	chlorothalonil	I		
95-49-8	VOCs	chlorotoluene;o-	I		
101-21-3	Pesticides	chlorpropham	O		
64902-72-3	Pesticides	chlorsulfuron	O		
18540-29-9	Metals	chromium (VI)	I	Respiratory	Nasal septum atrophy, Lactate dehydrogenase in bronchioalveolar lavage fluid
544-92-3	Cyanides	copper cyanide	I		
108-39-4	Phenols	cresol;m-	I		
95-48-7	Phenols	cresol;o-	I		
98-82-8	VOCs	cumene	I	Endocrine, Urinary	Increased kidney weights in female rats and adrenal weights in male and female rats
506-68-3	Cyanides	cyanogen bromide	I		
110-82-7	VOCs	cyclohexane	I	Developmental	Reduced pup weights in the F1 and F2 generations
108-94-1	VOCs	cyclohexanone	I		
108-91-8	VOCs	cyclohexylamine	I		
68085-85-8	Pesticides	cyhalothrin/karate	O		
52315-07-8	Pesticides	cypermethrin	O		
66215-27-8	Pesticides	cyromazine	O		
1861-32-1	Herbicides	dacthal	I		
75-99-0	Herbicides	dalapon, sodium salt	I		
39515-41-8	Pesticides	danitol	I		
94-82-6	Herbicides	db;2,4-	O		
50-29-3	Pesticides	ddt	I		
1163-19-5	PBDEs	decabromodiphenyl ether	I		
8065-48-3	Pesticides	demeton	I		
103-23-1	Phthalates	di(2-ethylhexyl)adipate	I		
96-12-8	Pesticides	dibromo-3-chloropropane;1,2-	I	Reproductive	Testicular effects
106-37-6	Pesticides	dibromobenzene;1,4-	I		
124-48-1	VOCs	dibromochloromethane	I		
84-74-2	Phthalates	di-butyl phthalate	I		
1918-00-9	Herbicides	dicamba	I		
79-43-6	SVOCs	dichloroacetic acid	I		
106-46-7	VOCs	dichlorobenzene;1,4-	I	Hepatic	Increased liver weights in P1 males
75-71-8	VOCs	dichlorodifluoromethane	I		
75-35-4	VOCs	dichloroethylene;1,1-	I	Hepatic	Liver toxicity (fatty change)
156-59-2	VOCs	dichloroethylene;1,2-,cis	I		
156-60-5	VOCs	dichloroethylene;1,2-,trans	I		
120-83-2	Phenols	dichlorophenol;2,4-	I		
94-75-7	Herbicides	dichlorophenoxyacetic acid;2,4-	I		
78-87-5	VOCs	dichloropropane;1,2-	I	Respiratory	Hyperplasia of the nasal mucosa
616-23-9	SVOCs	dichloropropanol;2,3-	I		
542-75-6	VOCs	dichloropropene;1,3-	I	Respiratory	Hypertrophy/ hyperplasia of the nasal respiratory epithelium
62-73-7	Pesticides	dichlorvos	I	Nervous	Decreased brain cholinesterase activity
60-57-1	Pesticides	dieldrin	I		
84-66-2	Phthalates	diethyl phthalate	I		

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43222-48-6	Pesticides	difenzoquat	O		
35367-38-5	Pesticides	diflubenzuron	I		
55290-64-7	Pesticides	dimethipin	O		
60-51-5	Pesticides	dimethoate	O		
120-61-6	Phthalates	dimethyl terephthalate	I		
121-69-7	VOCs	dimethylaniline;N,N-	I		
68-12-2	VOCs	dimethylformamide;N,N-	I	Hepatic	Digestive disturbances and minimal hepatic changes suggestive of liver abnormalities
105-67-9	Phenols	dimethylphenol;2,4-	I		
576-26-1	Phenols	dimethylphenol;2,6-	I		
95-65-8	Phenols	dimethylphenol;3,4-	I		
99-65-0	Explosives	dinitrobenzene;m-	I		
131-89-5	Phenols	dinitro-o-cyclohexyl phenol;4,6-	I		
51-28-5	Phenols	dinitrophenol;2,4-	I		
121-14-2	Explosives	dinitrotoluene;2,4-	I		
88-85-7	Herbicides	dinoseb	I		
123-91-1	VOCs	dioxane;1,4-	I	Nervous, Respiratory	Atrophy and respiratory metaplasia of the olfactory epithelium
957-51-7	Pesticides	diphenamid	I		
122-39-4	SVOCs	diphenylamine	O		
85-00-7	Pesticides	diquat	I		
298-04-4	Pesticides	disulfoton	I		
505-29-3	SVOCs	dithiane;1,4-	I		
330-54-1	Pesticides (Carbamate)	diuron	I		
2439-10-3	Pesticides	dodine	O		
115-29-7	Pesticides	endosulfan	I		
145-73-3	Herbicides	endothall	I		
72-20-8	Pesticides	endrin	I		
106-89-8	VOCs	epichlorohydrin	I	Respiratory	Changes in the nasal turbinates
106-88-7	VOCs	epoxybutane	I	Respiratory	Degenerative lesions of the nasal cavity
16672-87-0	Pesticides	ethephon	I		
563-12-2	Pesticides	ethion	I		
110-80-5	VOCs	ethoxyethanol;2-	I	Hematologic, Reproductive	Decreased testis weight, seminiferous tubule degeneration and decreased hemoglobin
141-78-6	VOCs	ethyl acetate	I		
75-00-3	VOCs	ethyl chloride	I	Developmental, Musculoskeletal	Delayed fetal ossification
759-94-4	Pesticides	ethyl dipropylthiocarbamate;S-	O		
60-29-7	VOCs	ethyl ether	I		
2104-64-5	Pesticides	ethyl p-nitrophenyl phenylphosphorothioate	I		
100-41-4	VOCs	ethylbenzene	I	Developmental	Developmental toxicity
106-93-4	VOCs	ethylene dibromide (EDB)	I	Respiratory	Nasal inflammation
107-21-1	VOCs	ethylene glycol	I		
111-76-2	Glycols	ethylene glycol monobutyl ether (EGBE)	I	Hematologic	Hemosiderin deposition in the liver
96-45-7	SVOCs	ethylene thiourea	I		
84-72-0	Phthalates	ethylphthalyl ethylglycolate	I		
101200-48-0	Pesticides	express	I		
22224-92-6	Pesticides	fenamiphos	I		
206-44-0	PAHs	fluoranthene	I		
86-73-7	PAHs	fluorene	I		

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16984-48-8	Nutrients	fluoride	I		
59756-60-4	Pesticides	fluridone	I		
56425-91-3	Pesticides	flurprimidol	O		
66332-96-5	Pesticides	flutolanil	O		
69409-94-5	Pesticides	fluvalinate	I		
133-07-3	Pesticides	folpet	O		
72178-02-0	Pesticides	fomesafen	O		
944-22-9	Pesticides	fonofos	I		
50-00-0	VOCs	formaldehyde	I		
39148-24-8	Pesticides	fosetyl-al	O		
110-00-9	Furans	furan	I		
98-01-1	VOCs	furfural	I		
77182-82-2	SVOCs	glufosinate-ammonium	O		
765-34-4	VOCs	glycidaldehyde	I		
1071-83-6	SVOCs	glyphosate	I		
69806-40-2	Pesticides	haloxyfop-methyl	I		
79277-27-3	Pesticides	harmony	O		
76-44-8	Pesticides	heptachlor	I		
1024-57-3	Pesticides	heptachlor epoxide	I		
87-82-1	SVOCs	hexabromobenzene	I		
68631-49-2	PBDEs	hexabromodiphenyl ether; 2,2',4,4',5,5'-	I		
118-74-1	Pesticides	hexachlorobenzene	I		
77-47-4	Pesticides	hexachlorocyclopentadiene	I	Respiratory	Suppurative inflammation of the nose
67-72-1	VOCs	hexachloroethane	I	Nervous	Neurotoxicity (tremors and ruffled pelt)
70-30-4	SVOCs	hexachlorophene	I		
822-06-0	VOCs	hexamethylene diisocyanate;1,6-	I	Nervous, Respiratory	Degeneration of olfactory epithelium
110-54-3	VOCs	hexane;n-	I	Nervous	Peripheral neuropathy (decreased MCV at 12 weeks)
591-78-6	VOCs	hexanone;2-	I	Nervous	Motor conduction velocity of the sciatic-tibial nerve
51235-04-2	Pesticides	hexazinone	I		
7647-01-0	VOCs	hydrogen chloride	I	Respiratory	Hyperplasia of nasal mucosa larynx and trachea
74-90-8	Cyanides	hydrogen cyanide	I	Endocrine	Thyroid enlargement and altered iodide uptake
7783-06-4	VOCs	hydrogen sulfide	I	Nervous, Respiratory	Nasal lesions of the olfactory mucosa
35554-44-0	Pesticides	imazalil	O		
81335-37-7	Pesticides	imazaquin	I		
36734-19-7	Pesticides	iprodione	I		
78-83-1	VOCs	isobutyl alcohol	I		
78-59-1	SVOCs	isophorone	I		
33820-53-0	Pesticides	isopropalin	I		
82558-50-7	Pesticides	isoxaben	I		
77501-63-4	Pesticides	lactofen	O		
58-89-9	Pesticides	lindane	I		
330-55-2	Pesticides (Carbamate)	linuron	O		
83055-99-6	Pesticides	londax	I		
121-75-5	Pesticides	malathion	I		

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108-31-6	SVOCs	maleic anhydride	I		
123-33-1	SVOCs	maleic hydrazide	I		
12427-38-2	Pesticides	maneb	I		
7439-96-5	Metals	manganese	I	Nervous	Impairment of neurobehavioral function
24307-26-4	Pesticides	mepiquat chloride	I		
7487-94-7	Metal compounds	mercuric chloride	I		
7439-97-6	Metals	mercury	I	Nervous	Hand tremor; increases in memory disturbances; slight subjective and objective evidence of autonomic dysfunction
150-50-5	Pesticides	merphos	I		
57837-19-1	Pesticides	metalaxyl	I		
126-98-7	VOCs	methacrylonitrile	I		
10265-92-6	Pesticides	methamidosphos	I		
67-56-1	VOCs	methanol	I	Developmental, Nervous	Reduced brain weight in rat pups at 6 weeks of age
950-37-8	Pesticides	methidathion	O		
16752-77-5	Pesticides (Carbamate)	methomyl	I		
72-43-5	Pesticides	methoxychlor	I		
109-86-4	VOCs	methoxyethanol;2-	I	Reproductive	Testicular effects
78-93-3	VOCs	methyl ethyl ketone	I	Developmental, Musculoskeletal	Developmental toxicity (skeletal variations)
108-10-1	VOCs	methyl isobutyl ketone	I	Developmental, Musculoskeletal	Reduced fetal body weight, skeletal variations, and increased fetal death in mice, and skeletal variations in rats.
22967-92-6	Metals (organometallic)	methyl mercury	I		
80-62-6	VOCs	methyl methacrylate	I	Nervous, Respiratory	Degeneration/ atrophy of olfactory epithelium (male rats)
91-57-6	PAHs	methyl naphthalene;2-	I		
298-00-0	Pesticides	methyl parathion	I		
1634-04-4	VOCs	methyl tert-butyl ether (MTBE)	I	Hepatic, Ocular, Other, Urinary	Increased absolute and relative liver and kidney weights and increased severity of spontaneous renal lesions (females), increased prostration (females), and swollen periocular tissue (males and females)
94-74-6	Herbicides	methyl-4-chlorophenoxy-acetic acid;2-	I		
75-09-2	VOCs	methylene chloride	I	Hepatic	Hepatic effects (hepatic vacuolation)
101-68-8	SVOCs	methylene diphenyl diisocyanate (MDI)	I	Nervous, Respiratory	Hyperplasia of olfactory epithelium
51218-45-2	Pesticides	metolachlor	I		
21087-64-9	Pesticides	metribuzin	I		
2385-85-5	Pesticides	mirex	I		
2212-67-1	Pesticides	molinate	I		
7439-98-7	Metals	molybdenum	I		
300-76-5	Pesticides	naled	I		
91-20-3	PAHs	naphthalene	I	Nervous, Respiratory	Nasal effects: hyperplasia and metaplasia in respiratory and olfactory epithelium, respectively
15299-99-7	Pesticides	napropamide	O		
7440-02-0	Metals	nickel soluble salts	I		
14797-55-8	Nutrients	nitrate	I		
14797-65-0	Nutrients	nitrite	I		
98-95-3	Explosives	nitrobenzene	I	Nervous, Respiratory	Bronchiolization of the alveoli and olfactory degeneration
556-88-7	SVOCs	nitroguanidine	I		
79-46-9	VOCs	nitropropane;2-	I	Hepatic	Liver focal vacuolization and nodules
27314-13-2	Pesticides	norflurazon	O		
85509-19-9	Herbicides	nustar	O		
32536-52-0	PBDEs	octabromodiphenyl ether	I		
2691-41-0	Explosives	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	I		

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19044-88-3	Pesticides	oryzalin	O		
19666-30-9	Pesticides	oxadiazon	I		
23135-22-0	Pesticides (Carbamate)	oxamyl	I		
42874-03-3	Pesticides	oxyfluorfen	O		
76738-62-0	Herbicides	paclobutrazol	I		
1910-42-5	Pesticides	Paraquat Dichloride	I		
40487-42-1	Pesticides	pendimethalin	O		
60348-60-9	PBDEs	pentabromodiphenyl ether; 2,2',4,4',5-	I		
32534-81-9	PBDEs	pentabromodiphenyl ethers	I		
608-93-5	SVOCs	pentachlorobenzene	I		
82-68-8	Pesticides	pentachloronitrobenzene	I		
87-86-5	Herbicides	pentachlorophenol	I		
52645-53-1	Pesticides	permethrin	I		
13684-63-4	Pesticides	phenmedipham	O		
108-95-2	Phenols	phenol	I		
108-45-2	SVOCs	phenylenediamine;m-	I		
62-38-4	Metals (organometallic)	phenylmercuric acetate	I		
75-44-5	VOCs	phosgene	I	Respiratory	Collagen staining indicative of fibrosis
732-11-6	Pesticides	phosmet	I		
7803-51-2	Gases	phosphine	I	Other	Decreased body weight
7664-38-2	SVOCs	phosphoric acid	I	Respiratory	Bronchiolar fibrosis
7723-14-0	Nonmetal inorganics	phosphorus	I		
85-44-9	Phthalates	phthalic anhydride	I		
1918-02-1	Herbicides	picloram	I		
29232-93-7	Pesticides	pirimiphos-methyl	O		
67747-09-5	Pesticides	prochloraz (not in HSDB)	I		
7287-19-6	Pesticides	prometryn	O		
1918-16-7	Pesticides	propachlor	I		
709-98-8	Pesticides	propanil	I		
2312-35-8	Pesticides	propargite	O		
107-19-7	VOCs	propargyl alcohol	I		
139-40-2	Pesticides	propazine	I		
122-42-9	Pesticides	propham	I		
60207-90-1	Pesticides	propiconazole	O		
123-38-6	VOCs	propionaldehyde	I	Nervous, Respiratory	Atrophy of olfactory epithelium
93-65-2	Herbicides	propionic acid;(2-methyl-4-chlorophenoxy)2-	I		
107-98-2	Glycols	propylene glycol monomethyl ether	I	Nervous	Mild reversible sedation
75-56-9	VOCs	propylene oxide	I	Respiratory	Nest-like infolds of the nasal respiratory epithelium
81335-77-5	Pesticides	pursuit	O		
51630-58-1	Pesticides	pydrin	I		
129-00-0	PAHs	pyrene	I		
110-86-1	VOCs	pyridine	I		
121-82-4	Explosives	rdx	I		
10453-86-8	Pesticides	resmethrin	I		
83-79-4	Pesticides	rotenone	I		
78-48-8	Pesticides	s,s,s-tributylphosphorotrithioate	O		
78587-05-0	Pesticides	savey	I		
7783-00-8	Metal compounds	selenious acid	I		
7782-49-2	Metals	selenium and compounds	I		
74051-80-2	Pesticides	sethoxydim	O		



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7440-22-4	Metals	silver	I		
506-64-9	Cyanides	silver cyanide	I		
122-34-9	Pesticides	simazine	I		
26628-22-8	Metal compounds	sodium azide	I		
148-18-5	Metals (organometallic)	sodium diethyldithiocarbamate	I		
62-74-8	Metals (organometallic)	sodium fluoroacetate	I		
7440-24-6	Metals	strontium	I		
57-24-9	SVOCs	strychnine	I		
100-42-5	VOCs	styrene	I	Nervous	CNS effects
88671-89-0	Pesticides	systhane	I		
1746-01-6	Dioxins	TCDD;2,3,7,8- (LOW ORGANIC) (DIOXIN)	I		
34014-18-1	Pesticides	tebuthiuron	I		
5902-51-2	Pesticides	terbacil	I		
886-50-0	Pesticides	terbutryn	I		
5436-43-1	PBDEs	tetrabromodiphenyl ether 2,2',4,4'	I		
95-94-3	SVOCs	tetrachlorobenzene;1,2,4,5-	I		
630-20-6	VOCs	tetrachloroethane;1,1,1,2-	I		
79-34-5	VOCs	tetrachloroethane;1,1,2,2-	I		
127-18-4	VOCs	tetrachloroethylene (PCE)	I	Nervous, Ocular	Reaction time/cognitive effects and effects to vision in occupationally-exposed adults.
58-90-2	Phenols	tetrachlorophenol;2,3,4,6-	I		
961-11-5	Pesticides	tetrachlorvinphos	I		
3689-24-5	Pesticides	tetraethyl dithiopyrophosphate	I		
78-00-2	Metals (organometallic)	tetraethyl lead	I		
811-97-2	VOCs	tetrafluoroethane;1,1,1,2-	I	Reproductive	Leydig cell hyperplasia
109-99-9	Furans	tetrahydrofuran	I	Hepatic, Nervous	Increased liver weight and centrilobular cytomegaly, CNS effects (narcosis)
28249-77-6	Pesticides	thiobencarb	I		
23564-05-8	Pesticides	thiophanate-methyl	O		
137-26-8	Pesticides	thiram	O		
118-96-7	Explosives	tnt	I		
108-88-3	VOCs	toluene	I	Nervous	Neurological effects in occupationally-exposed workers
26471-62-5	VOCs	toluene diisocyanate mixture;2,4-/2,6-	I	Respiratory	Chronic lung-function decline
93-72-1	Herbicides	tp;2,4,5-	I		
66841-25-6	Pesticides	tralomethrin	I		
2303-17-5	Pesticides	triallate	O		
82097-50-5	Pesticides	triasulfuron	I		
615-54-3	VOCs	tribromobenzene;1,2,4-	I		
56-35-9	Organotins	tributyltin oxide	I		
76-13-1	VOCs	trichloro-1,2,2-trifluoroethane;1,1,2-	I		
76-03-9	SVOCs	trichloroacetic acid	I		
120-82-1	VOCs	trichlorobenzene;1,2,4-	I		
71-55-6	VOCs	trichloroethane;1,1,1-	I	Hepatic, Nervous	Liver histopathologic changes, Performance on neurobehavioral tests
79-00-5	VOCs	trichloroethane;1,1,2-	I		
79-01-6	VOCs	trichloroethylene (TCE)	I	Developmental, Immune	Decreased thymus weight, fetal heart malformations
75-69-4	VOCs	trichlorofluoromethane	I		
95-95-4	Phenols	trichlorophenol;2,4,5-	I		
93-76-5	Herbicides	trichlorophenoxyacetic acid;2,4,5-	I		
598-77-6	VOCs	trichloropropane;1,1,2-	I		

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96-18-4	VOCs	trichloropropane;1,2,3-	I	Respiratory	peribronchial lymphoid hyperplasia in male rats
58138-08-2	Pesticides	tridiphane	I		
121-44-8	VOCs	triethylamine	I	Respiratory	Inflammation of the nasal passage
1582-09-8	Pesticides	trifluralin	I		
526-73-8	VOCs	trimethylbenzene;1,2,3-	I	Nervous	Decreased Pain sensitivity
95-63-6	VOCs	trimethylbenzene;1,2,4-	I	Nervous	Decreased Pain sensitivity
108-67-8	VOCs	trimethylbenzene;1,3,5-	I	Developmental	Decreased fetal weight
99-35-4	Explosives	trinitrobenzene;1,3,5-	I		
unavailable12	Radionuclides	uranium, soluble salts	A		
1314-62-1	Metal compounds	vanadium pentoxide	I		
1929-77-7	Pesticides	vernarn	I		
50471-44-8	Pesticides	vinclozolin	O		
108-05-4	VOCs	vinyl acetate	I	Nervous, Respiratory	Nasal epithelial lesions
75-01-4	VOCs	vinyl chloride	I	Hepatic	Liver cell polymorphism
81-81-2	Pesticides	warfarin	I		
1330-20-7	VOCs	xylenes	I	Nervous	Impaired motor coordination (decreased rotarod performance)
7440-66-6	Metals	zinc	I		
557-21-1	Cyanides	zinc cyanide	I		
1314-84-7	Metal compounds	zinc phosphide	I		
12122-67-7	Pesticides	zineb	I		

**Notes - Noncancer Effects Table**

Source: A = ATSDR; I = EPA IRIS; O = EPA Office of Pesticide Programs

MTCA human health cleanup levels for individual noncarcinogens are based on achieving a hazard quotient (HQ) of 1. An HQ is derived by comparing a human health receptors (e.g., a child or adult resident) estimated daily dose of a hazardous substance to the reference dose. The reference dose is considered an estimate of a daily oral exposure level that is likely to be without an appreciable risk of harmful effects during a lifetime. If the average daily dose is higher than the reference dose, then there is a potential for a noncancer health effect to occur and the hazard quotient is greater than 1. When there are multiple noncarcinogenic chemicals of concern at a site, the HQs for each are summed up to derive a hazard index (HI). The HI is an expression of the additivity of noncarcinogenic health effects. The principle of additivity assumes that similar organ systems and health endpoints will be affected by the chemicals of concern. As such, and consistent with EPA superfund risk assessment guidance, MTCA allows noncancer hazard quotients from multiple chemicals to be apportioned by similar type of toxic response when evaluating compliance with the noncancer target HI of 1.

The information provided in the CLARC noncancer effects table, which was primarily compiled based on information from EPA's Integrated Risk Information System (IRIS) database, can be used to calculate hazard indices for groups of chemicals with similar types of noncancer effects. Groupings can be made by major noncancer effect categories such as neurotoxicity, developmental toxicity, reproductive toxicity, immunotoxicity, and adverse effects by target organ. This information is presented in the table by exposure route (i.e., ingestion or inhalation) for those chemicals with noncarcinogenic toxicity data available in EPA's IRIS database, unless referenced otherwise.

Note that there is a not a table showing carcinogenic tumor types. For cancer causing chemicals (a.k.a., carcinogens), the total cancer risk is derived by summing the cancer risk for all chemicals of concern. This approach is in accordance with MTCA and is consistent with EPA guidelines in which risks associated with carcinogens are considered additive with the same toxicological endpoint (i.e., cancer).