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Canadian Centre for Occupational Health and Safety

**RTECS** Registry of Toxic Effects of Chemical Substances®

Data source: MDL Information Systems, Inc.

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REFRESH RECORD

CHEMICAL IDENTIFICATION

RTECS Number	GO7875000
Chemical Name	p-Cresol, 2,6-di-tert-butyl-
CAS Registry Number	128-37-0

Other CAS Registry Nos. 58500-82-6
Last Updated 200711
Data Items Cited 126
Molecular Formula C15-H24-O
Molecular Weight 220.39
Wiswesser Line Notation 1X1&1&R BQ E1 CX1&1&1
Compound Descriptor Tumorigen
Drug
Mutagen
Human
Primary Irritant
Reproductive Effector

Synonyms/Trade Names

2,6-Bis(1,1-dimethylethyl)-4-methylphenol
2,6-Di-terc.butyl-p-kresol
2,6-Di-terc-butyl-1-hydroxy-4-methylbenzene
2,6-Di-terc-butyl-4-methylphenol
2,6-Di-terc-butyl-p-cresol
2,6-Di-terc-butyl-p-cresol
2,6-Di-terc-butyl-p-methylphenol
3,5-Di-terc-butyl-4-hydroxytoluene
4-Hydroxy-3,5-di-terc-butyltoluene
4-Methyl-2,6-di-terc. butylfenol
4-Methyl-2,6-di-terc-butylphenol
AO 29
AO 4K
Advastab 401
Agidol
Agidol 1
Alkofen BP
Antioxidant 29
Antioxidant 30
Antioxidant 4
Antioxidant 4K
Antioxidant DBPC
Antioxidant KB
Antrancine 8
BHT
BHT (food grade)
BUKS
Butylated hydroxytoluene
Butylhydroxytoluene
Butylhydroksytoluenu
CAO 1
CAO 3
Catalin cao-3

Chemanox 11
DBMP
DBPC
DBPC (technical grade)
Dalpac
Deenax
Dibunol
Dibutylated hydroxytoluene
Impruvol
Ionol
Ionol (antioxidant)
Ionol 1
Ionol CP
Ionole
Kerabit
Methyl-di-tert-butylphenol
NCI-C03598
Nocrac 200
Nonox TBC
P 21
Parabar 441
Paranox 441
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-
Stavox
Sumilizer BHT
Sustane BHT
Swanox BHT
Tenamene 3
Tenox BHT
Topanol
Topanol O
Topanol OC
Toxolan P
Vanlube PC
Vanlube PCX
Vianol
Vulkanox KB

HEALTH HAZARD DATA

SKIN/EYE IRRITATION DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Reaction Severity	Reference
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Standard Draize test	Administration onto the skin	Human	500 mg/48H	Mild	AMIHBC AMA Archives of Industrial Hygiene and Occupational Medicine. (Chicago, IL) V.2-10, 1950-54. For publisher information, see AEHLAU. Volume(issue)/page/year: 5,311,1952
Standard Draize test	Administration onto the skin	Rodent - rabbit	500 mg/48H	Moderate	AMIHBC AMA Archives of Industrial Hygiene and Occupational Medicine. (Chicago, IL) V.2-10, 1950-54. For publisher information, see AEHLAU. Volume(issue)/page/year: 5,311,1952
Standard Draize test	Administration into the eye	Rodent - rabbit	100 mg/24H	Moderate	85JCAE "Prehled Prumyslove Toxikologie; Organicke Latky," Marhold, J., Prague, Czechoslovakia, Avicenum, 1986 Volume(issue)/page/year: -,229,1986

ACUTE TOXICITY DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Toxic Effects	Reference
TDLo - Lowest published toxic dose	Oral	Human - woman	80 mg/kg	Behavioral - coma Gastrointestinal - gastritis Gastrointestinal - nausea or vomiting	NEJMAG New England Journal of Medicine. (Massachusetts Medical Soc., 10 Shattuck St., Boston, MA 02115) V.198- 1928- Volume(issue)/page/year: 314,648,1986
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - mouse	650 mg/kg	Behavioral - tremor Lungs, Thorax, or Respiration - chronic pulmonary edema	SRTCAC Science Reports of the Research Institutes, Tohoku University, Series C: Medicine. (Tohoku University, Research Institute for Tuberculosis and Cancer, 4-1 Seiry-machi, Sendai, Japan) V.1- 1949- Volume(issue)/page/year: 36(1-4),10,1989
LD50 - Lethal dose, 50 percent kill	Intraperitoneal	Rodent - mouse	138 mg/kg	Lungs, Thorax, or Respiration - chronic pulmonary edema Lungs, Thorax, or	TXAPA9 Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-

				Respiration - other changes Blood - hemorrhage	Volume(issue)/page/year: 61,475,1981
LD50 - Lethal dose, 50 percent kill	Intravenous	Rodent - mouse	180 mg/kg	Behavioral - sleep	JMCMAR Journal of Medicinal Chemistry. (American Chemical Soc., Distribution Office Dept. 223, POB POB 57136, West End Stn., Washington, DC 20037) V.6-1963- Volume(issue)/page/year: 23,1350,1980
LDLo - Lowest published lethal dose	Oral	Mammal - cat	940 mg/kg	Gastrointestinal - hypermotility, diarrhea Behavioral - tremor Lungs, Thorax, or Respiration - respiratory depression	AMIHAB AMA Archives of Industrial Health. (Chicago, IL) V.11-21, 1955-60. For publisher information, see AEHLAU. Volume(issue)/page/year: 11,93,1955
LDLo - Lowest published lethal dose	Oral	Rodent - rabbit	2100 mg/kg	Gastrointestinal - hypermotility, diarrhea Behavioral - tremor Lungs, Thorax, or Respiration - respiratory depression	AMIHAB AMA Archives of Industrial Health. (Chicago, IL) V.11-21, 1955-60. For publisher information, see AEHLAU. Volume(issue)/page/year: 11,93,1955
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - guinea pig	10700 mg/kg	Gastrointestinal - hypermotility, diarrhea Behavioral - tremor Lungs, Thorax, or Respiration - respiratory depression	AMIHAB AMA Archives of Industrial Health. (Chicago, IL) V.11-21, 1955-60. For publisher information, see AEHLAU. Volume(issue)/page/year: 11,93,1955
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - rat	10 mg/kg	Liver - other changes Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol) Biochemical - Metabolism (Intermediary) - lipids including	FATOAO Farmakologiya i Toksikologiya (Moscow). For English translation, see PHTXA6 and RPTOAN. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.2-1939- Volume(issue)/page/year: 55,34,1992

				transport	
TDLo - Lowest published toxic dose	Oral	Rodent - rat	25 mg/kg	Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol) Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - transaminases Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other Enzymes	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul. B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 62,56,1999
TDLo - Lowest published toxic dose	Rectal	Rodent - rat	25 mg/kg	Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol) Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - transaminases Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other Enzymes	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul. B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 62,56,1999
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	50 mg/kg	Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul. B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 62,56,1999
TDLo - Lowest published toxic dose	Rectal	Rodent - mouse	50 mg/kg	Biochemical - Metabolism (Intermediary) - effect on inflammation or	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul.

				mediation of inflammation	B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 62,56,1999
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - rabbit	2100 mg/kg	Details of toxic effects not reported other than lethal dose value	VCVGK* "Vrednie chemichescie veshestva, galogen I kislород sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
LDLo - Lowest published lethal dose	Oral	Rodent - rabbit	2000 mg/kg	Details of toxic effects not reported other than lethal dose value	VCVGK* "Vrednie chemichescie veshestva, galogen I kislород sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
LDLo - Lowest published lethal dose	Oral	Mammal - cat	940 mg/kg	Details of toxic effects not reported other than lethal dose value	VCVGK* "Vrednie chemichescie veshestva, galogen I kislород sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - mouse	100 mg/kg	Lungs, Thorax, or Respiration - fibrosis (interstitial) Lungs, Thorax, or Respiration - changes in lung weight Nutritional and Gross Metabolic - weight loss or decreased	VCVGK* "Vrednie chemichescie veshestva, galogen I kislород sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year:

				weight gain	-,212,1994
LD50 - Lethal dose, 50 percent kill	Intraperitoneal	Rodent - rat	8 gm/kg	Details of toxic effects not reported other than lethal dose value	IJTOFN International Journal of Toxicology. (Taylor & Francis, 47 Runway Rd., Suite g, Levittown, PA 19057) V.16- 1997- Volume(issue)/page/year: 21,19,2002
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - mouse	650 mg/kg	Behavioral - tremor Behavioral - ataxia Lungs, Thorax, or Respiration - other changes	IJTOFN International Journal of Toxicology. (Taylor & Francis, 47 Runway Rd., Suite g, Levittown, PA 19057) V.16- 1997- Volume(issue)/page/year: 21,19,2002
LD50 - Lethal dose, 50 percent kill	Intraperitoneal	Rodent - mouse	138 mg/kg	Lungs, Thorax, or Respiration - acute pulmonary edema Blood - hemorrhage	IJTOFN International Journal of Toxicology. (Taylor & Francis, 47 Runway Rd., Suite g, Levittown, PA 19057) V.16- 1997- Volume(issue)/page/year: 21,19,2002
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - rat	890 mg/kg	Details of toxic effects not reported other than lethal dose value	ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005 Volume(issue)/page/year: -,365,2005
LD50 - Lethal dose, 50 percent kill	Oral	Rodent - mouse	1040 mg/kg	Details of toxic effects not reported other than lethal dose value	ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005 Volume(issue)/page/year: -,365,2005
LD50 - Lethal dose, 50 percent kill	Intraperitoneal	Rodent - mouse	138 mg/kg	Details of toxic effects not reported other than lethal dose value	ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005 Volume(issue)/page/year: -,365,2005
LD50 - Lethal dose, 50 percent kill	Subcutaneous	Rodent - mouse	650 mg/kg	Details of toxic effects not reported other than lethal dose value	ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005 Volume(issue)/page/year: -,365,2005
LD50 - Lethal dose, 50	Oral	Rodent - guinea pig	10700 mg/kg	Details of toxic effects not reported other than lethal	ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005

percent
kill

dose value

Volume(issue)/page/year:
-,365,2005**OTHER MULTIPLE DOSE TOXICITY DATA**

Type of Test	Route of Exposure	Species Observed	Dose Data	Toxic Effects	Reference
TDLo - Lowest published toxic dose	Oral	Rodent - rat	5185 mg/kg/4W (continuous)	Liver - other changes Liver - changes in liver weight	TOLED5 Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977- Volume(issue)/page/year: 87,103,1996
TDLo - Lowest published toxic dose	Oral	Rodent - rat	109 gm/kg/2Y (continuous)	Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol) Blood - changes in erythrocyte (RBC) count Blood - changes in leukocyte (WBC) count	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 19,147,1981
TDLo - Lowest published toxic dose	Oral	Rodent - rat	27 gm/kg/90D (continuous)	Liver - changes in liver weight Endocrine - evidence of thyroid hyperfunction Endocrine - changes in thyroid weight	TOLED5 Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977- Volume(issue)/page/year: 10,239,1982
TDLo - Lowest published toxic dose	Oral	Rodent - rat	37800 mg/kg/6W (continuous)	Liver - changes in liver weight Endocrine - changes in adrenal weight Nutritional and Gross Metabolic - weight loss or decreased weight gain	AJEBAK Australian Journal of Experimental Biology and Medical Science. (Adelaide, S.A., Australia) V.1-64, 1924-86. Volume(issue)/page/year: 39,353,1961
TDLo - Lowest published toxic dose	Oral	Rodent - rat	5600 mg/kg/16W (continuous)	Liver - changes in liver weight Kidney/Ureter/Bladder - other changes in urine composition	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 3,433,1965

TDLo - Lowest published toxic dose	Oral	Rodent - rat	275 mg/kg/26W (continuous)	Liver - changes in liver weight Skin and Appendages - hair Nutritional and Gross Metabolic - weight loss or decreased weight gain	AJEBAK Australian Journal of Experimental Biology and Medical Science. (Adelaide, S.A., Australia) V.1-64, 1924-86. Volume(issue)/page/year: 37,533,1959
TDLo - Lowest published toxic dose	Oral	Rodent - rat	112 gm/kg/80W (continuous)	Liver - changes in liver weight Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.) Biochemical - Metabolism (Intermediary) - other proteins	TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973- Volume(issue)/page/year: 7,289,1977
TDLo - Lowest published toxic dose	Oral	Rodent - rat	5040 mg/kg/7D (continuous)	Liver - changes in liver weight Blood - changes in erythrocyte (RBC) count Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - transaminases	APTOA6 Acta Pharmacologica et Toxicologica. (Copenhagen, Denmark) V.1-59, 1945-86. For publisher information, see PHTOEH Volume(issue)/page/year: 49,14,1981
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	13500 mg/kg/18D (intermittent)	Liver - changes in liver weight Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other Enzymes	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 3,417,1965
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	48600 mg/kg/30D (continuous)	Lungs, Thorax, or Respiration - changes in lung weight Liver - changes in liver weight Kidney/Ureter/Bladder - changes in tubules (including acute renal failure, acute tubular necrosis)	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 30,89,1992

TDLo - Lowest published toxic dose	Administration onto the skin	Rodent - mouse	5 gm/kg/4W (intermittent)	Lungs, Thorax, or Respiration - changes in lung weight Related to Chronic Data - death	TOLED5 Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977- Volume(issue)/page/year: 34,99,1986
TDLo - Lowest published toxic dose	Oral	Primate - monkey	14 gm/kg/4W (intermittent)	Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - phosphatases	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 10,769,1972
TDLo - Lowest published toxic dose	Oral	Rodent - hamster	1596 mg/kg/14D (continuous)	Liver - changes in liver weight Nutritional and Gross Metabolic - weight loss or decreased weight gain Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other transferases	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 34,595,1996
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - mouse	750 mg/kg/3W (intermittent)	Lungs, Thorax, or Respiration - other changes Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other Enzymes Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation	TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973- Volume(issue)/page/year: 169,1,2001
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - mouse	750 mg/kg/3W (intermittent)	Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation	TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973- Volume(issue)/page/year: 169,1,2001

TDLo - Lowest published toxic dose	Oral	Rodent - rat	1200 mg/kg/3D (intermittent)	Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other transferases	FATOAO Farmakologiya i Toksikologiya (Moscow). For English translation, see PHTXA6 and RPTOAN. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.2- 1939- Volume(issue)/page/year: 50,81,1987
TDLo - Lowest published toxic dose	Oral	Rodent - rat	840 mg/kg/14D (intermittent)	Cardiac - other changes Biochemical - Metabolism (Intermediary) - lipids including transport	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul. B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 56,47,1993
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - rabbit	480 mg/kg/4D (intermittent)	Cardiac - other changes Biochemical - Metabolism (Intermediary) - lipids including transport	FATOAO Farmakologiya i Toksikologiya (Moscow). For English translation, see PHTXA6 and RPTOAN. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.2- 1939- Volume(issue)/page/year: 55,19,1992
TDLo - Lowest published toxic dose	Oral	Rodent - rat	350 mg/kg/7D (intermittent)	Gastrointestinal - other changes Liver - other changes	FATOAO Farmakologiya i Toksikologiya (Moscow). For English translation, see PHTXA6 and RPTOAN. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.2- 1939- Volume(issue)/page/year: 47,87,1984
TDLo - Lowest published toxic dose	Oral	Rodent - rat	350 mg/kg/7D (intermittent)	Gastrointestinal - other changes	FATOAO Farmakologiya i Toksikologiya (Moscow). For English translation, see PHTXA6 and RPTOAN. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.2- 1939- Volume(issue)/page/year:

					47,87,1984
TDLo - Lowest published toxic dose	Oral	Rodent - rat	500 mg/kg/5D (intermittent)	Gastrointestinal - other changes Biochemical - Metabolism (Intermediary) - lipids including transport	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul. B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 61,21,1998
TDLo - Lowest published toxic dose	Oral	Rodent - rat	39.7 mg/kg/3D (intermittent)	Blood - change in clotting factors	EKFAE9 Eksperimental'naya i Klinicheskaya Farmakologiya. Experimental and Clinical Pharmacology. (Mezhdunarodnaya Kniga, ul. B. Yakimanka, 39, 117049 Moscow, Russia) V.55- 1992- Volume(issue)/page/year: 62,38,1999
TDLo - Lowest published toxic dose	Oral	Rodent - rat	6300 mg/kg/6W (continuous)	Liver - tumors Tumorigenic - protects against induction of experimental tumors Tumorigenic - active as anti-cancer agent	CALEDQ Cancer Letters (Shannon, Ireland). (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1- 1975- Volume(issue)/page/year: 143,173,1999
TDLo - Lowest published toxic dose	Oral	Rodent - rat	2.625 mg/kg/1W (continuous)	Liver - other changes Blood - change in clotting factors Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - multiple enzyme effects	VCVGK* "Vrednie chemichescie veshstva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994

TDLo - Lowest published toxic dose	Oral	Rodent - rat	2000 mg/kg/4D (intermittent)	Liver - multiple effects Kidney/Ureter/Bladder - other changes Related to Chronic Data - death	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	2000 mg/kg/4D (intermittent)	Liver - multiple effects Kidney/Ureter/Bladder - other changes Related to Chronic Data - death	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
TDLo - Lowest published toxic dose	Oral	Rodent - rat	6.3 mg/kg/1W (continuous)	Brain and Coverings - changes in circulation (hemorrhage, thrombosis, etc.) Blood - hemorrhage Related to Chronic Data - death	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	10.08 mg/kg/1W (continuous)	Brain and Coverings - changes in circulation (hemorrhage, thrombosis, etc.) Blood - hemorrhage Related to Chronic Data - death	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year:

					- ,212,1994
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - hamster	1140 mg/kg/3D (intermittent)	Brain and Coverings - changes in circulation (hemorrhage, thrombosis, etc.) Behavioral - tremor	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - guinea pig	570 mg/kg/3D (intermittent)	Blood - change in clotting factors	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,212,1994
TDLo - Lowest published toxic dose	Intraperitoneal	Rodent - mouse	1750 mg/kg/1W (intermittent)	Gastrointestinal - tumors Liver - tumors Kidney/Ureter/Bladder - tumors	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. Volume(issue)/page/year: -,213,1994
TDLo - Lowest published toxic dose	Oral	Rodent - rat	547.5 mg/kg/2Y (continuous)	Brain and Coverings - changes in brain weight Liver - changes in liver weight Nutritional and Gross Metabolic - weight loss or decreased weight gain	VCVGK* "Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994.

<p>TDLo - Oral Lowest published toxic dose</p>	<p>Bird - turkey</p>	<p>4000 ppm/10D (continuous)</p>	<p>Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.)</p>	<p>Volume(issue)/page/year: -,213,1994</p> <p>FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 41,671,2003</p>
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TUMORIGENIC DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Toxic Effects	Reference
TDLo - Lowest published toxic dose	Oral	Rodent - rat	134 gm/kg/32W (continuous)	Tumorigenic - carcinogenic by RTECS criteria Kidney/Ureter/Bladder - tumors Tumorigenic - cells (cultured) transformed	CRNGDP Carcinogenesis (London). (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980- Volume(issue)/page/year: 4,895,1983
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	435 mg/kg/69W (continuous)	Tumorigenic - carcinogenic by RTECS criteria Lungs, Thorax, or Respiration - tumors Gastrointestinal - tumors	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 12,367,1974
TD - Toxic dose (other than lowest)	Oral	Rodent - rat	247 gm/kg/3Y (continuous)	Tumorigenic - carcinogenic by RTECS criteria Reproductive - Tumorigenic effects - transplacental tumorigenesis Liver - tumors	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 24,1,1986
TD - Toxic dose (other than lowest)	Oral	Rodent - rat	247 gm/kg/3Y (continuous)	Tumorigenic - neoplastic by RTECS criteria Reproductive - Tumorigenic effects - ovarian tumors	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year:

TD - Toxic dose (other than lowest)	Oral	Rodent - mouse	1423 mg/kg/43W (continuous)	Tumorigenic - neoplastic by RTECS criteria Liver - tumors	24,1,1986 TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1-1973- Volume(issue)/page/year: 38,151,1986
TD - Toxic dose (other than lowest)	Oral	Rodent - rat	247 gm/kg	Tumorigenic - carcinogenic by RTECS criteria Liver - tumors	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 24,1121,1986
TD - Toxic dose (other than lowest)	Oral	Rodent - rat	963 gm/kg	Tumorigenic - carcinogenic by RTECS criteria Gastrointestinal - tumors	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year: 24,1071,1986
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	1200 mg/kg/3W (intermittent)	Tumorigenic - neoplastic by RTECS criteria Lungs, Thorax, or Respiration - tumors Tumorigenic - tumor types after systemic administration not seen spontaneously	CALEDQ Cancer Letters (Shannon, Ireland). (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1-1975- Volume(issue)/page/year: 145,101,1999

REPRODUCTIVE DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Sex/Duration	Toxic Effects	Reference
TDLo - Lowest published toxic dose	Oral	Rodent - rat	6 gm/kg	male 13 week(s) pre-mating female 13 week(s) pre-mating - 3 week(s)	Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain)	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20- 1982- Volume(issue)/page/year:

TDLo - Lowest published toxic dose	Oral	Rodent - rat	18 gm/kg	post-birth male 2 week(s) pre-mating female 2 week(s) pre-mating - 3 week(s) post-birth	Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain) Reproductive - Effects on Newborn - behavioral	24,1,1986 FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 19,153,1981
TDLo - Lowest published toxic dose	Oral	Rodent - rat	9 gm/kg	male 2 week(s) pre-mating female 2 week(s) pre-mating - 3 week(s) post-birth	Reproductive - Effects on Newborn - weaning or lactation index (e.g., # alive at weaning per # alive at day 4)	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 19,153,1981
TDLo - Lowest published toxic dose	Oral	Rodent - rat	35 gm/kg	male 10 week(s) pre-mating	Reproductive - Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea)	ENMUDM Environmental Mutagenesis. (New York, NY) V.1-9, 1979-87. For publisher information, see EMMUEG. Volume(issue)/page/year: 8,357,1986
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	43800 mg/kg	female 52 day(s) pre-mating 1-21 day(s) after conception	Reproductive - Maternal Effects - parturition Reproductive - Effects on Newborn - weaning or lactation index (e.g., # alive at weaning per # alive at day 4) Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain)	FCTXAV Food and Cosmetics Toxicology. (London, UK) V.1-19, 1963-81. For publisher information, see FCTOD7. Volume(issue)/page/year: 3,371,1965

TDLo - Lowest published toxic dose	Oral	Rodent - mouse	12600 mg/kg	female 1-21 day(s) after conception	Reproductive - Effects on Newborn - behavioral	FEFRA7 Federation Proceedings, Federation of American Societies for Experimental Biology. (Bethesda, MD) V.1-46, 1942-87. Volume(issue)/page/year: 31,596,1972
TDLo - Lowest published toxic dose	Oral	Rodent - mouse	1200 mg/kg	female 9 day(s) after conception	Reproductive - Specific Developmental Abnormalities - musculoskeletal system	TRENAF Kenkyu Nenpo--Tokyo-toritsu Eisei Kenkyusho. Annual Report of Tokyo Metropolitan Research Laboratory of Public Health. (Tokyo-toritsu Eisei Kenkyusho, 24-1, 3-chome, Hyakunin-cho, Shin-juku-ku, Tokyo 160, Japan) V.1- 1949/50- Volume(issue)/page/year: 28(2),45,1977

MUTATION DATA

Type of Test	Route of Exposure	Species Observed	Dose Data	Reference
DNA inhibition		Human HeLa cell	500 umol/L	CRNGDP Carcinogenesis (London). (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980- Volume(issue)/page/year: 13,2389,1992
DNA inhibition		Human Lymphocyte	20 umol/L	BBRCA9 Biochemical and Biophysical Research Communications. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- Volume(issue)/page/year: 80,963,1978
DNA damage	Oral	Rodent - rat	1400 mg/kg	FCTOD7 Food and Chemical Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.20-1982- Volume(issue)/page/year:

				25,603,1987
Unscheduled DNA synthesis	Oral	Rodent - rat	16800 mg/kg/4W (continuous)	TXAPA9 Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- Volume(issue)/page/year: 99,37,1989
Unscheduled DNA synthesis		Rodent - rat Liver	100 pmol/L	CRNGDP Carcinogenesis (London). (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980- Volume(issue)/page/year: 5,1547,1984
Unscheduled DNA synthesis	Intraperitoneal	Rodent - rat	1200 mg/kg/3D (continuous)	DANKAS Doklady Akademii Nauk SSSR. Proceedings of the Academy of Sciences of the USSR. For English translation, see DBIOAM and DKBSAS. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1933- Volume(issue)/page/year: 287,371,1986
Dominant lethal test	Oral	Rodent - rat	5460 mg/kg/10W (continuous)	ENMUDM Environmental Mutagenesis. (New York, NY) V.1-9, 1979-87. For publisher information, see EMMUEG. Volume(issue)/page/year: 8,357,1986
Mutation in microorganisms		Rodent - mouse Lymphocyte	6 mg/L	EMMUEG Environmental and Molecular Mutagenesis. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987- Volume(issue)/page/year: 11,91,1988
Mutation test systems - not otherwise specified	Oral	Rodent - mouse	500 mg/kg	MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 343,157,1995
DNA inhibition	Intraperitoneal	Rodent - mouse	250 mg/kg	CBINA8 Chemico-Biological Interactions. (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1- 1969- Volume(issue)/page/year:

Dominant lethal test	Oral	Rodent - mouse	12 gm/kg/10W (continuous)	19,279,1977 NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: PB278-026
Mutation in mammalian somatic cells		Rodent - mouse Lymphocyte	6 mg/L	EMMUEG Environmental and Molecular Mutagenesis. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987- Volume(issue)/page/year: 11,91,1988
Sperm Morphology	Intraperitoneal	Rodent - mouse	350 mg/kg/5D (intermittent)	CMMUAO Chemical Mutagens. Principles and Methods for Their Detection. (Plenum Pub. Corp., 233 Spring St., New York, NY 10013) V.1- 1971- Volume(issue)/page/year: 5,257,1978
Cytogenetic analysis		Rodent - hamster Ovary	100 ug/L	MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 345,73,1995
DNA damage	Oral	Rodent - mouse	100 mg/kg	MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 519,103,2002
Specific locus test		Rodent - mouse Cells - not otherwise specified	45 umol/L	MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 608,29,2006

REVIEWS

ACGIH TLV-TWA 2 mg/m3 (inhalable,

DTLVS* The Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) booklet issues by American Conference of Governmental

vapor)	Industrial Hygienists (ACGIH), Cincinnati, OH, 1996 Volume(issue)/page/year: TLV/BEI,2007
ACGIH TLV-Not classifiable as human carcinogen	DTLVS* The Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) booklet issues by American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, OH, 1996 Volume(issue)/page/year: TLV/BEI,2007
IARC Cancer Review:Animal Limited Evidence	IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972- Volume(issue)/page/year: 40,161,1986
IARC Cancer Review:Human No Adequate Data	IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972- Volume(issue)/page/year: 40,161,1986
IARC Cancer Review:Group 3	IMSUDL IARC Monographs, Supplement. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) No.1- 1979- Volume(issue)/page/year: 7,56,1987
TOXICOLOGY REVIEW	IJTOFN International Journal of Toxicology. (Taylor & Francis, 47 Runway Rd., Suite g, Levittown, PA 19057) V.16- 1997- Volume(issue)/page/year: 21,19,2002
TOXICOLOGY REVIEW	ENTOX* Encyclopedia of Toxicology: Reference Book, Elsevier, 2005 Volume(issue)/page/year: -,365,2005
TOXICOLOGY REVIEW	MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 584,1,2005

OCCUPATIONAL EXPOSURE LIMITS

OEL-AUSTRALIA: TWA 10 mg/m³, JAN1993

OEL-BELGIUM: TWA 10 mg/m³, JAN1993

OEL-FINLAND: TWA 10 mg/m³, STEL 20 mg/m³, Skin, JAN1999

OEL-FRANCE: VME 10 mg/m³, JAN1999

OEL-SWITZERLAND: MAK-W 10 mg/m³, JAN1999

OEL-THE NETHERLANDS: MAC-TGG 10 mg/m³, 2003

OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN check ACGIH TLV;

OEL IN SINGAPORE, VIETNAM check ACGIH TLV

OEL-DENMARK: TWA 10 mg/m³, OCT 2002

OEL-GERMANY: MAK 20 mg/m³ (inhalable), 2005

OEL-MEXICO: TWA 10 mg/m³; STEL 20 mg/m³, 2004

OEL-UNITED KINGDOM: TWA 10 mg/m³, 2005

OEL-KOREA: TWA 10 mg/m³, 2006

OEL-NEW ZEALAND: TWA 10 mg/m³, JAN2002

NIOSH STANDARDS DEVELOPMENT AND SURVEILLANCE DATA

NIOSH Recommended Exposure Level (Rel)

NIOSH REL TO 2,6-DI-t-BUTYL-p-CRESOL-air: 10H TWA 10 mg/m³

Reference

NIOSH* National Institute of Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda. Volume(issue)/page/year: DHHS #92-100,1992

NIOSH Occupational Exposure Survey Data

NOHS - National Occupational Hazard Survey (1974)

Hazard code: 83383

No. of industries: 32

No. of facilities: 1526 (estimated)

No. of occupations: 39

No. of employees: 28860 (estimated)

NOES - National Occupational Exposure Survey (1983)

Hazard code: 83383

No. of industries: 210

No. of facilities: 27242 (estimated)

No. of occupations: 154

No. of employees: 591238 (estimated)

No. of female employees: 163774 (estimated)

STATUS IN U.S.

EPA GENETOX PROGRAM 1988, Positive: D melanogaster-whole sex chrom. loss

EPA GENETOX PROGRAM 1988, Negative: Histidine reversion-Ames test; Mouse specific locus

EPA GENETOX PROGRAM 1988, Negative: D melanogaster Sex-linked lethal

EPA GENETOX PROGRAM 1988, Inconclusive: D melanogaster-reciprocal translocation

EPA GENETOX PROGRAM 1988, Inconclusive: Mammalian micronucleus; Sperm morphology-mouse

EPA TSCA Section 8(b) CHEMICAL INVENTORY

EPA TSCA Section 8(d) unpublished health/safety studies

EPA TSCA Section 8(e) Risk Notification, 8EHQ-0892-9076

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001

NCI Carcinogenesis Bioassay (feed); no evidence: mouse, rat
NCITR* National Cancer Institute Carcinogenesis Technical Report Series. (Bethesda, MD)
No.0-205. For publisher information, see NTPTR*. Volume(issue)/page/year:
NCI-TR-150,1979

END OF RECORD

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