

CHAPTER 8. REFERENCES

- Aaserud O, Gjerstad L, Nakstad P, et al. 1988. Neurological examination, computerized- tomography, cerebral blood-flow and neuropsychological examination in workers with long-term exposure to carbon disulfide. *Toxicology* 49:277-282. [https://doi.org/10.1016/0300-483x\(88\)90009-1](https://doi.org/10.1016/0300-483x(88)90009-1).
- Aaserud O, Russell D, Nyberg-Hansen R, et al. 1992. Regional cerebral blood flow after long-term exposure to carbon disulfide. *Acta Neurol Scand* 85(4):266-271. <https://doi.org/10.1111/j.1600-0404.1992.tb04042.x>.
- ACGIH. 1986. Carbon disulfide. In: Documentation of the threshold limit values and biological exposure indices. 5th ed. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 104-105.
- ACGIH. 1994. Carbon disulfide. In: TLV-Threshold limit values and biological exposure indices for 1994-1995. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 15, 58-59.
- Andersen ME, Krishnan K. 1994. Relating in vitro to in vivo exposures with physiologically based tissue dosimetry and tissue response models. In: Salem H, ed. Animal test alternatives: Refinement, reduction, replacement. New York, NY: Marcel Dekker, Inc., 9-25.
- Aneja VP, Overton JH, Cupitt LT, et al. 1980. Measurements of emission rates of carbon disulfide from biogenic sources and its possible importance to the stratospheric aerosol layer. *Chem Eng Comm* 4(6):721-727. <https://doi.org/10.1080/00986448008935943>.
- Antov G, Kazakova B, Spasovski M, et al. 1985. Effect of carbon disulphide on the cardiovascular system. *J Hyg Epidemiol Microbiol Immunol* 29(4):329-335.
- Arnts RR, Seila RL, Bufalini JJ. 1989. Determination of room temperature OH rate constants for acetylene, ethylene dichloride, ethylene dibromide, p-dichlorobenzene and carbon disulfide. *JAPCA* 39(4):453-460. <https://doi.org/10.1080/08940630.1989.10466544>.
- Arp EW, Wolf PH, Checkoway H. 1983. Lymphocyte leukemia and exposures to benzene and other solvents in the rubber industry. *J Occup Med* 25(8):598-602.
- Atkinson R, Perry RA, Pitts JN. 1978. Rate constants for the reaction of OH radicals with COS, CS₂ and CH₃SCCH₃ over the temperature range 299-430 K. *Chem Phys Lett* 54(1):14-18. [https://doi.org/10.1016/0009-2614\(78\)85653-X](https://doi.org/10.1016/0009-2614(78)85653-X).
- ATSDR. 1989. Decision guide for identifying substance-specific data needs related to toxicological profiles. Agency for Toxic Substances and Disease Registry. *Fed Regist* 54(174):37618-37634. <https://www.govinfo.gov/content/pkg/FR-1989-09-11/pdf/FR-1989-09-11.pdf>. October 4, 2023.
- ATSDR. 1999. Exposure investigation report: Health consultation: Elyria, Ohio. Atlanta, GA: Agency for Toxic Substances and Disease Registry.
- ATSDR. 2008. Health consultation: The former Industrial Chemical Supply Company site, Tampa, Hillborough County, Florida, EPA Facility ID: FLD991304619. Atlanta, GA: Agency for Toxic Substances and Disease Registry. https://www.floridahealth.gov/environmental-health/hazardous-waste-sites/_documents/l/lasallestreet082008.pdf. November 7, 2023.
- ATSDR. 2022. Carbon disulfide. Full SPL data. Substance priority list (SPL) resource page. Agency for Toxic Substances and Disease Registry. <https://www.atsdr.cdc.gov/SPL/resources/index.html>. June 24, 2022.
- ATSDR. 2025. Carbon disulfide. Sanders2015 HLCs used in SHOWER Model v4.0.1 and PHAST. Atlanta, GA: Agency for Toxic Substances and Disease Registry. <https://www.atsdr.cdc.gov/pha-guidance/resources/SHOWER-Model-Users-Guide-508.pdf>. February 24, 2025.
- Balcarova O, Halik J. 1991. Ten-year epidemiological study of ischaemic heart disease (IHD) in workers exposed to carbon disulphide. *Sci Total Environ* 101(1-2):97-99. [https://doi.org/10.1016/0048-9697\(91\)90107-p](https://doi.org/10.1016/0048-9697(91)90107-p).
- Banwart WL, Bremner JM. 1975. Formation of volatile sulfur compounds by microbial decomposition of sulfur-containing amino acids in soils. *Soil Biol Biochem* 7(6):359-364. [https://doi.org/10.1016/0038-0717\(75\)90050-4](https://doi.org/10.1016/0038-0717(75)90050-4).

8. REFERENCES

- Barnes DG, Dourson M. 1988. Reference dose (RfD): Description and use in health risk assessments. *Regul Toxicol Pharmacol* 8:471-486. [https://doi.org/10.1016/0273-2300\(88\)90047-5](https://doi.org/10.1016/0273-2300(88)90047-5).
- Bartonicek V. 1957. [The distribution of carbon disulphide in the whole blood, the brain and adrenal glands over a given period with parenteral administration to white rats]. *Prac Lek* 9:28-30. (Czech)
- Bartonicek V. 1959. [The distribution of free carbon disulfide and bound carbon disulfide liberated by acid hydrolysis in the organs of white rats]. *Prac Lek* 10:504-510. (Czech)
- Beauchamp RD, Bus JS, Popp JA, et al. 1983. A critical review of the literature on carbon disulfide toxicity. *Crit Rev Toxicol* 11(3):169-278. <https://doi.org/10.3109/10408448309128255>.
- Besis A, Katsaros T, Samara C. 2023. Concentrations of volatile organic compounds in vehicular cabin air - Implications to commuter exposure. *Environ Pollut* 330:121763. <https://doi.org/10.1016/j.envpol.2023.121763>.
- Bexfield LM, Belitz K, Fram MS, et al. 2022. Volatile organic compounds in groundwater used for public supply across the United States: Occurrence, explanatory factors, and human-health context. *Sci Total Environ* 827:154313. <https://doi.org/10.1016/j.scitotenv.2022.154313>.
- Biondi B, Klein I. 2004. Hypothyroidism as a risk factor for cardiovascular disease. *Endocrine* 24(1):1-13. <https://doi.org/10.1385/ENDO:24:1:001>.
- Bobnis W, Millo B, Gregorczyk J. 1976. Immunologic evaluation of β -lipoprotein antigen in the serum of men expose to carbon disulfide over protracted periods of time. *Arch Immunol Ther Exp* 24:21-28.
- Bond EJ, DeMatteis F. 1969. Biochemical changes in rat liver after administration of carbon disulphide, with particular reference to microsomal changes. *Biochem Pharmacol* 18:2531-2549. [https://doi.org/10.1016/0006-2952\(69\)90368-2](https://doi.org/10.1016/0006-2952(69)90368-2).
- Bortkiewicz A, Gadzicka E, Szymczak W. 1997. Heart rate variability in workers exposed to carbon disulfide. *J Auton Nerv Syst* 66(1-2):62-68. [https://doi.org/10.1016/s0165-1838\(97\)00045-3](https://doi.org/10.1016/s0165-1838(97)00045-3).
- Bortkiewicz A, Gadzicka E, Szymczak W. 2001. Cardiovascular disturbances in workers exposed to carbon disulfide. *Appl Occup Environ Hyg* 16(4):455-463. <https://doi.org/10.1080/10473220117960>.
- Bradley PM, Journey CA, Romanok KM, et al. 2017. Expanded target-chemical analysis reveals extensive mixed-organic-contaminant exposure in U.S. streams. *Environ Sci Technol* 51(9):4792-4802. <https://doi.org/10.1021/acs.est.7b00012>.
- Brieger H. 1967. Carbon disulphide in the living organism. In: Brieger H, Teisinger J, eds. *Toxicology of carbon disulphide: Proceedings of a symposium, Prague, September 15th-17th, 1966*. Amsterdam: Excerpta Medica Foundation, 27-31.
- Bulat P, Daemen E, Van Risseghem M, et al. 2002. Comparison of occupational exposure to carbon disulphide in a viscose rayon factory before and after technical adjustments. *Appl Occup Environ Hyg* 17(1):34-38. <https://doi.org/10.1080/104732202753306131>.
- Buschbacher RM. 1998. Body mass index effect on common nerve conduction study measurements. *Muscle Nerve* 21(11):1398-1404. [https://doi.org/10.1002/\(sici\)1097-4598\(199811\)21:11<1398::Aid-mus6>3.0.Co;2-4](https://doi.org/10.1002/(sici)1097-4598(199811)21:11<1398::Aid-mus6>3.0.Co;2-4).
- Cai SX, Bao YS. 1981. Placental transfer, secretion into mother milk of carbon disulphide and the effects on maternal function of female viscose rayon worker. *Ind Health* 19:15-29. <https://doi.org/10.2486/indhealth.19.15>.
- Campanale C, Triozzi M, Ragonese A, et al. 2023. Dithiocarbamates: Properties, methodological approaches and challenges to their control. *Toxics* 11(10):851. <https://doi.org/10.3390/toxics11100851>.
- Campbell L, Jones AH, Wilson HK. 1985. Evaluation of occupational exposure to carbon disulphide by blood, exhaled air, and urine analysis. *Am J Ind Med* 8(2):143-153. <https://doi.org/10.1002/ajim.4700080209>.
- Caroldi S, Jarvis JA, Magos L. 1984. In vivo inhibition of dopamine- β -hydroxylase in rat adrenals during exposure to carbon disulphide. *Arch Toxicol* 55(4):265-267. <https://doi.org/10.1007/BF00341023>.

8. REFERENCES

- Carreres Pons M, Chalansonnet M, Venet T, et al. 2017. Carbon disulfide potentiates the effects of impulse noise on the organ of Corti. *Neurotoxicology* 59:79-87. <https://doi.org/10.1016/j.neuro.2017.02.003>.
- Cassitto MG, Camerino D, Imbriani M, et al. 1993. Carbon disulfide and the central nervous system: A 15-year neurobehavioral surveillance of an exposed population. *Environ Res* 63(2):252-263. <https://doi.org/10.1006/enrs.1993.1145>.
- CDC. 2022. Biomonitoring data tables for environmental chemicals: Urinary 2-thioxothiazolidine-4-carboxylic acid (2011-2014, 2017-2018). National report on human exposure to environmental chemicals. Centers for Disease Control and Prevention. https://www.cdc.gov/exposurereport/report/pdf/cgroup46_URXTTC_2011-p.pdf. July 25, 2023.
- Chalansonnet M, Carreres-Pons M, Venet T, et al. 2018. Combined exposure to carbon disulfide and low-frequency noise reversibly affects vestibular function. *Neurotoxicology* 67:270-278. <https://doi.org/10.1016/j.neuro.2018.06.010>.
- Chalansonnet M, Carreres-Pons M, Venet T, et al. 2020. Effects of co-exposure to CS(2) and noise on hearing and balance in rats: continuous versus intermittent CS(2) exposures. *J Occup Med Toxicol* 15:9. <https://doi.org/10.1186/s12995-020-00260-5>.
- Chang HY, Chou TC, Wang PY, et al. 2002. Biological monitoring of carbon disulphide: kinetics of urinary 2-thiothiazolidine-4-carboxylic acid (TTCA) in exposed workers. *Toxicol Ind Health* 18(1):1-14. <https://doi.org/10.1191/0748233702th125oa>.
- Chang SJ, Shih TS, Chou TC, et al. 2003. Hearing loss in workers exposed to carbon disulfide and noise. *Environ Health Perspect* 111(13):1620-1624. <https://doi.org/10.1289/ehp.6289>.
- Chang SJ, Chen CJ, Shih TS, et al. 2007. Risk for hypertension in workers exposed to carbon disulfide in the viscose rayon industry. *Am J Ind Med* 50(1):22-27. <https://doi.org/10.1002/ajim.20409>.
- Chapman LJ, Sauter SL, Henning RA, et al. 1991. Finger tremor after carbon disulfide-based pesticide exposures. *Arch Neurol* 48(8):866-870. <https://doi.org/10.1001/archneur.1991.00530200108029>.
- Checkoway H, Wilcosky T, Wolf P, et al. 1984. An evaluation of the associations of leukemia and rubber industry solvent exposures. *Am J Ind Med* 5(3):239-249. <https://doi.org/10.1002/ajim.4700050307>.
- Chen Y, Van Deventer D, Nianogo R, et al. 2024. Maternal residential exposure to solvents from industrial sources during pregnancy and childhood cancer risk in California. *Int J Hyg Environ Health* 259:114388. <https://doi.org/10.1016/j.ijheh.2024.114388>.
- Chin M, Davis DD. 1993. Global sources and sinks of OCS and CS₂ and their distributions. *Global Biogeochem Cycles* 7(2):321-337. <https://doi.org/10.1029/93GB00568>.
- Cho SK, Kim RH, Yim SH, et al. 2002. Long-term neuropsychological effects and MRI findings in patients with CS₂ poisoning. *Acta Neurol Scand* 106(5):269-275. <https://doi.org/10.1034/j.1600-0404.2002.01245.x>.
- Chou TC, Tsai JC, Sheu HM, et al. 2005. Topical exposure to carbon disulfide induces epidermal permeability alterations in physiological and pathological changes. *Toxicol Lett* 158(3):225-236. <https://doi.org/10.1016/j.toxlet.2005.03.017>.
- Chrostek-Maj J, Czeczotko B. 1995a. The evaluation of the health state of the workers occupationally exposed to low concentration of carbon disulfide (CS₂). Part one: General medical examination and laboratory tests. *Przegl Lek* 52(5):249-251.
- Chrostek-Maj J, Czeczotko B. 1995b. The evaluation of the health state of the workers occupationally exposed to low concentration of carbon disulphide (CS₂). Part two: The complex way of the examination of the central nervous system (CNS). *Przegl Lek* 52(5):252-256.
- Chu CC, Huang CC, Chen RS, et al. 1995. Polyneuropathy induced by carbon disulphide in viscose rayon workers. *Occup Environ Med* 52:404-407. <https://doi.org/10.1136/oem.52.6.404>.
- Chung HY. 1999. Volatile components in crabmeats of *Charybdis feriatus*. *J Agric Food Chem* 47(6):2280-2287. <https://doi.org/10.1021/jf981027t>.

8. REFERENCES

- Cinar N, Sahin S, Sahin M, et al. 2013. Effects of anthropometric factors on nerve conduction: an electrophysiologic study of feet. *J Am Podiatr Med Assoc* 103(1):43-49. <https://doi.org/10.7547/1030043>.
- Cirila AM, Graziano C. 1981. Health impairment in viscose-rayon workers with carbon disulfide risk below 30 mg/m³: An exposed-controls study. *G Ital Med Lav* 3:69-73.
- Cirila AM, Bertazzi PA, Tomasini M, et al. 1978. Study of endocrinological functions and sexual behaviour in carbon disulphide workers. *Med Lav* 69(2):118-129.
- Clerici WJ, Fechter LD. 1991. Effects of chronic carbon disulfide inhalation on sensory and motor function in the rat. *Neurotoxicol Teratol* 13(3):249-255. [https://doi.org/10.1016/0892-0362\(91\)90069-9](https://doi.org/10.1016/0892-0362(91)90069-9).
- Clewell HJ. 1995. The application of physiologically based pharmacokinetic modeling in human health risk assessment of hazardous substances. *Toxicol Lett* 79(1-3):207-217. [https://doi.org/10.1016/0378-4274\(95\)03372-r](https://doi.org/10.1016/0378-4274(95)03372-r).
- Cohen AE, Paulus HJ, Keenan RG, et al. 1958. Skin absorption of carbon disulfide vapor in rabbits. I. Associated changes in blood protein and zinc. *AMA Arch Ind Health* 17(2):164-169. <https://doi.org/10.1080/00028895909343722>.
- Conley FL, Thomas RL, Wilson BL. 2005. Measurement of volatile organic compounds in the urban atmosphere of Harris County, Texas, USA. *J Environ Sci Health A Tox Hazard Subst Environ Eng* 40(9):1689-1699. <https://doi.org/10.1081/ese-200067996>.
- Cooper DJ, Saltzman ES. 1993. Measurements of atmospheric dimethylsulfide, hydrogen sulfide, and carbon disulfide during GTE/CITE 3. *J Geophys Res* 98(12):23397-23409. <https://doi.org/10.1029/92JD00218>.
- Cooper WJ, Cooper DJ, Saltzman ES, et al. 1987. Emissions of biogenic sulfur compounds from several wetland soils in Florida. *Atmos Environ* 21(7):1491-1496. [https://doi.org/10.1016/0004-6981\(87\)90311-8](https://doi.org/10.1016/0004-6981(87)90311-8).
- Cox RA, Sheppard D. 1980. Reactions of OH radicals with gaseous sulfur compounds. *Nature* 284:330-331.
- Cox C, Que Hee SS, Lynch DW. 1996. Urinary 2-thiothiazolidine-4-carboxylic acid (TTCA) as the major urinary marker of carbon disulfide vapor exposure in rats. *Toxicol Ind Health* 12(1):81-92. <https://doi.org/10.1177/074823379601200105>.
- Cox C, Hee SS, Tolos WP. 1998. Biological monitoring of workers exposed to carbon disulfide. *Am J Ind Med* 33(1):48-54. [https://doi.org/10.1002/\(sici\)1097-0274\(199801\)33:1<48::aid-ajim6>3.0.co;2-s](https://doi.org/10.1002/(sici)1097-0274(199801)33:1<48::aid-ajim6>3.0.co;2-s).
- Daft J. 1987. Determining multifumigants in whole grains and legumes, milled and low-fat grain products, spices, citrus fruit, and beverages. *J Assoc Off Anal Chem* 70(4):734-739. <https://doi.org/10.1093/jaoac/70.4.734>.
- Dalvi RR, Neal RA. 1978. Metabolism in vivo of carbon disulfide to carbonyl sulfide and carbon dioxide in the rat. *Biochem Pharmacol* 27:1608-1609. [https://doi.org/10.1016/0006-2952\(78\)90494-x](https://doi.org/10.1016/0006-2952(78)90494-x).
- Dalvi RR, Poore RE, Neal RA. 1974. Studies of the metabolism of carbon disulfide by rat liver microsomes. *Life Sci* 14:1785-1796. [https://doi.org/10.1016/0024-3205\(74\)90280-x](https://doi.org/10.1016/0024-3205(74)90280-x).
- Dalvi RR, Hunter AL, Neal RA. 1975. Toxicological implications of the mixed-function oxidase catalyzed metabolism of carbon disulfide. *Chem Biol Interact* 10:349-361. [https://doi.org/10.1016/0009-2797\(75\)90057-5](https://doi.org/10.1016/0009-2797(75)90057-5).
- Dalvi RR, Dalvi PS, Bilups LH. 2008. Potentiation of the hepatotoxicity of carbon disulfide by chlordane-induced cytochrome P450 enzymes. *FASEB Journal* 22(S1):1137.1135. https://doi.org/10.1096/fasebj.22.1_supplement.1137.5.
- Dance CA. 1992. Carbon disulphide: Assessment of clastogenic action on bone marrow erythrocytes in the micronucleus test, final report, with cover letter dated 05/24/94 (sanitized). Confidential. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8D. OTS0557435.

8. REFERENCES

- 86940001026S. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0557435.xhtml>. July 28, 2022.
- Danielsson BR, Bergman K, d'Argy R. 1984. Tissue disposition of carbon disulfide: II. Whole-body autoradiography ³⁵S- and ¹⁴C-labelled carbon disulfide in pregnant mice. *Acta Pharmacol Toxicol* 54(3):233-240. <https://doi.org/10.1111/j.1600-0773.1984.tb01923.x>.
- Davidson M, Feinleib M. 1972. Carbon disulfide poisoning: A review. *Am Heart J* 83(1):100-114. [https://doi.org/10.1016/0002-8703\(72\)90112-3](https://doi.org/10.1016/0002-8703(72)90112-3).
- DeMatteis F. 1974. Covalent binding of sulfur to microsomes and loss of cytochrome p-450 during the oxidative desulfuration of several chemicals. *Mol Pharmacol* 10:849-854.
- DeMatteis F, Seawright AA. 1973. Oxidative metabolism of carbon disulphide by the rat: Effect of treatments which modify the liver toxicity of carbon disulphide. *Chem Biol Interact* 7(6):375-388. [https://doi.org/10.1016/0009-2797\(73\)90037-9](https://doi.org/10.1016/0009-2797(73)90037-9).
- DeMello WZ, Cooper DJ, Cooper WJ, et al. 1987. Spatial and diel variability in the emissions of some biogenic sulfur compounds from a Florida *Spartina alterniflora* coastal zone. *Atmos Environ* 21(4):987-990. [https://doi.org/10.1016/0004-6981\(87\)90095-3](https://doi.org/10.1016/0004-6981(87)90095-3).
- Denny KH, Gerhart JM. 1991. Developmental inhalation toxicity study of carbon disulfide in the New Zealand white rabbit with attachments and cover letter dated 081491. Chemical Manufacturers Association. Submitted to the U.S. Environmental Protection Agency under TSCA Section 4. OTS0530931. 4091125057. 42126 C1-4A. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0530931.xhtml>. July 28, 2022.
- Djerassi LS, Lumbroso R. 1968. Carbon disulphide poisoning with increased ethereal sulphate excretion. *Br J Ind Med* 25:220-222. <https://doi.org/10.1136/oem.25.3.220>.
- Djuric D. 1967. Determination of carbon disulphide and its metabolites in biological material. In: Brieger H, Teisinger J, eds. *Toxicology of carbon disulphide: Proceedings of a symposium, Prague, September 15th-17th, 1966*. Amsterdam: Excerpta Medica Foundation, 52-61.
- Djuric D, Postic-Grujin A, Graovac-Leposavic L, et al. 1973. Antabuse as an indicator of human susceptibility to carbon disulfide: Excretion of diethyldithiocarbamate sodium in the urine of workers exposed to CS₂ after oral administration of disulfiram. *Arch Environ Health* 26(6):287-289. <https://doi.org/10.1080/00039896.1973.10666282>.
- DOE. 2025a. Carbon disulfide, CAS no. 75-15-0. PAC database - detailed chemical data. U.S. Department of Energy. <https://edms3.energy.gov/pac/search/detail/570>. March 4, 2025.
- DOE. 2025b. Definition of PACs (AEGLs, ERPGs, or TEELs). U.S. Department of Energy. <https://edms3.energy.gov/pac/TeelDef>. March 4, 2025.
- DOL. 1940. Appendix: A study of cases of psychosis among viscose rayon workers. Occupational poisoning in the viscose rayon industry. Washington, DC: U.S. Department of Labor. Bulletin No. 34.
- Domergue J, Lison D, Haufroid V. 2016. No evidence of cardiovascular toxicity in workers exposed below 5 ppm carbon disulfide. *Int Arch Occup Environ Health* 89(5):835-845. <https://doi.org/10.1007/s00420-016-1122-x>.
- Donner M, Falck K, Hemminiki K, et al. 1981. Carbon disulfide is not mutagenic in bacteria or drosophila. *Mutat Res* 91:163-166. [https://doi.org/10.1016/0165-7992\(81\)90026-9](https://doi.org/10.1016/0165-7992(81)90026-9).
- Drexler H, Goen T, Angerer J, et al. 1994. Carbon disulfide. I. External and internal exposure to carbon disulphide of workers in the viscose industry. *Int Arch Occup Environ Health* 65:359-365. <https://doi.org/10.1007/bf00383244>.
- Drexler H, Ulm K, Hubmann M, et al. 1995. Carbon disulfide. III. Risk-factors for coronary heart diseases in workers in the viscose industry. *Int Arch Occup Environ Health* 67:243-252. <https://doi.org/10.1007/bf00409406>.
- Dunn AD, Rudorf WD. 1989. Reaction with inorganic reagents. In: *Carbon disulfide in organic chemistry*. New York, NY: Halsted Press, 28-37.
- Dutkiewicz T, Baranowska B. 1967. The significance of absorption of carbon disulfide through the skin in the evaluation of exposure. In: Brieger H, Teisinger J, eds. *Toxicology of carbon disulphide:*

8. REFERENCES

- Proceedings of a symposium, Prague, September 15th-17th, 1966. Amsterdam: Excerpta Medica Foundation, 50-51.
- EC/HC. 2000. Canadian Environmental Protection Act, 1999: Priority substances list assessment report: Carbon disulfide. Environment Canada/Health Canada. Minister of Public Works and Government. https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/hecs-sesc/pdf/pubs/contaminants/psl2-lsp2/carbon_disulf/carbon_disulf-eng.pdf. July 25, 2023.
- El-Masri HA, Mumtaz MM, Yushak ML. 2004. Application of physiologically-based pharmacokinetic modeling to investigate the toxicological interaction between chlorpyrifos and parathion in the rat. *Environ Toxicol Pharmacol* 16(1-2):57-71. <https://doi.org/10.1016/j.etap.2003.10.002>.
- El-Masry Z, Mehani S, El-Habashi A, et al. 1976. Effects of carbon disulfide on the liver of rats pre-treated with phenobarbitone. *Ain Shams Med J* 27(2):201-205.
- El-Sobkey MK, Massoud AA, Abdel-Karim AH, et al. 1979. Serum thyroxine, serum cholesterol and its fractions in workers exposed to carbon disulphide. *J Egypt Public Health Assoc* 54(5-6):431-442.
- EPA. 1976. Carbon disulfide, carbonyl sulfide: Literature review and environmental assessment. Menlo Park, CA: U.S. Environmental Protection Agency. PB257947. EPA600978009. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB257947.xhtml>. July 26, 2023.
- EPA. 1978. Carbon disulfide, carbonyl sulfide: Literature review and environmental assessment. Washington, DC: U.S. Environmental Protection Agency. EPA600978009. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000TAF5.txt>. July 26, 2023.
- EPA. 1981a. Treatability manual. I. Treatability data. Washington, DC: U.S. Environmental Protection Agency. EPA600282001A. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=30005R3P.txt>. July 27, 2023.
- EPA. 1981b. Engineering handbook for hazardous waste incineration. Washington, DC: U.S. Environmental Protection Agency. EPASW889. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000KAVZ.txt>. July 27, 2023.
- EPA. 1985. Intent to cancel registrations of pesticide products containing carbon tetrachloride, carbon disulfide, and ethylene dichloride. U.S. Environmental Protection Agency. *Fed Regist* 50(205):42997-42999. <https://www.loc.gov/item/fr050205/>. May 28, 2024.
- EPA. 1986. Health and environmental effects profile for carbon disulfide. Cincinnati, OH: U.S. Environmental Protection Agency. PB88219688. EPA600X86155. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB88219688.xhtml>. July 26, 2023.
- EPA. 1994. Methods for derivation of inhalation reference concentrations and application of inhalation dosimetry Washington, DC: U.S. Environmental Protection Agency. EPA600890066F. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=30001K4C.txt>. July 28, 2023.
- EPA. 2011. Preliminary study of carbon disulfide discharges from cellulose products manufacturers. U.S. Environmental Protection Agency. EPA821R11009. https://www.epa.gov/sites/default/files/2015-10/documents/cellulose-products_prelim-study_2011.pdf. February 26, 2025.
- EPA. 2012. Carbon disulfide. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. Washington, DC: U.S. Environmental Protection Agency. <https://www.epa.gov/tsca-screening-tools/epi-suitetm-estimation-program-interface>. July 28, 2023.
- EPA. 2016. Carbon disulfide. Vapor intrusion screening level calculator. U.S. Environmental Protection Agency. https://epa-visl.ornl.gov/cgi-bin/visl_search. March 11, 2025.
- EPA. 2018a. 2018 Edition of the drinking water standards and health advisories. Washington, DC: U.S. Environmental Protection Agency. EPA822F18001. <https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf>. June 15, 2022.
- EPA. 2018b. Compiled AEGL values. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2018-08/documents/compiled_aegls_update_27jul2018.pdf. April 12, 2020.
- EPA. 2018c. About acute exposure guideline levels (AEGLs). U.S. Environmental Protection Agency. <https://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls>. July 26, 2018.

8. REFERENCES

- EPA. 2020. National emission inventory (NEI) data. U.S. Environmental Protection Agency. <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data>. February 18, 2025.
- EPA. 2022a. Notification requirements. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 302.6. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-J/part-302>. July 27, 2023.
- EPA. 2022b. Hazardous wastes from non-specific sources. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 261.31. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-261>. July 27, 2023.
- EPA. 2022c. 2020 CDR data. U.S. Environmental Protection Agency. <https://www.epa.gov/chemical-data-reporting/access-cdr-data#2020>. July 28, 2023.
- EPA. 2022d. Toxic chemical release inventory reporting forms and instructions: Revised 2021 version. U.S. Environmental Protection Agency. EPA740B22002. https://ordspub.epa.gov/ords/guideme_ext/guideme_ext/guideme/file/ry_2021_rfi.pdf. August 22, 2023.
- EPA. 2023a. Carbon disulfide. Pesticide chemical search. U.S. Environmental Protection Agency. https://ordspub.epa.gov/ords/pesticides/f?p=CHEMICALSEARCH:3:::21,3,31,7,12,25:P3_XCHEMICAL_ID:1742. July 25, 2023.
- EPA. 2023b. National primary drinking water regulations. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 25.141. <https://www.govinfo.gov/content/pkg/CFR-2023-title40-vol25/pdf/CFR-2023-title40-vol25-part141.pdf>. March 4, 2025.
- EPA. 2024a. Annual summary data: Carbon disulfide. Air quality system: Concentration by monitor. U.S. Environmental Protection Agency. <https://www.epa.gov/aqs>. February 25, 2025.
- EPA. 2024b. Carbon disulfide. U.S. EPA East Palestine, Ohio train derailment air sampling dashboard. U.S. Environmental Protection Agency. <https://www.epa.gov/east-palestine-oh-train-derailment/air-sampling-data>. February 19, 2025.
- EPA. 2024c. Carbon disulfide. U.S. EPA East Palestine, OH derailment water sampling dashboard. U.S. Environmental Protection Agency. <https://www.epa.gov/east-palestine-oh-train-derailment/water-sampling-data>. February 19, 2025.
- Eskin TA, Merigan WH, Wood RW. 1988. Carbon disulfide effects on the visual system. II. Retinogeniculate degeneration. *Invest Ophthalmol Vis Sci* 29(4):519-527.
- Fain JE, Brakefield LA, Sherman LB, et al. 1987. Environmental risk management of land treatment operational units. *Haz Waste Haz Mater* 4(1):83-97. <https://doi.org/10.1089/hwm.1987.4.83>.
- Farwell SO, Sherrard AE, Pack MR, et al. 1979. Sulfur compounds volatilized from soils at different moisture contents. *Soil Biol Biochem* 11(4):411-415. [https://doi.org/10.1016/0038-0717\(79\)90055-5](https://doi.org/10.1016/0038-0717(79)90055-5).
- Fasano WJ, McDougal JN. 2008. In vitro dermal absorption rate testing of certain chemicals of interest to the Occupational Safety and Health Administration: summary and evaluation of USEPA's mandated testing. *Regul Toxicol Pharmacol* 51(2):181-194. <https://doi.org/10.1016/j.yrtph.2008.04.005>.
- FDA. 2025. Substances added to food. U.S. Food and Drug Administration. <https://www.cfsanappsexternal.fda.gov/scripts/fdcc/?set=FoodSubstances>. March 4, 2025.
- Flick EW. 1985. Organic sulfur compounds. In: *Industrial solvents handbook*. 3rd ed. Park Ridge, NJ: Noyes Publications, 173.
- Foa V, Cassitto MG, Forzi M, et al. 1976. Mental performance and personality disorders among workers exposed to carbon disulphide: Comparison between two different rayon plants. In: Horvath M, Emil F, eds. *Adverse effects of environmental chemicals and psychotropic drugs, neurophysiological and behavioral tests*. Vol. 2. New York: Elsevier Scientific Publishing Company, 173-182.
- Franco G, Malamani T, Germani L, et al. 1982. Assessment of coronary heart disease risk among viscose rayon workers exposed to carbon disulfide at concentrations of about 30 mg/m³. *Scand J Work Environ Health* 8(2):113-120. <https://doi.org/10.5271/sjweh.2487>.

8. REFERENCES

- Frantik E. 1970. The development of motor disturbances in experimental chronic carbon disulphide intoxication. *Med Lav* 61(5):309-313.
- Freundt KJ, Liebaltd GP, Sieber KH. 1974a. Effect of barbiturates on the liver of rats exposed to carbon disulphide vapour. *Int Arch Arbeitsmed* 32(4):297-303. <https://doi.org/10.1007/BF02178968>.
- Freundt KJ, Schauenburg KJ, Eichhorn P. 1974b. Effect of acute exposure to carbon disulfide vapour upon some components of the hepatic-microsomal enzyme system in rats. *Arch Toxicol* 32:233-240. <https://doi.org/10.1007/BF00318438>.
- Freundt KJ, Schnapp E, Dreher W. 1975. Pharmacokinetics of inhaled carbon disulphide in rats in relation to its inhibitory effect on the side-chain oxidation of hexobarbital. *Int Arch Occup Environ Health* 35:173-186. <https://doi.org/10.1007/BF01848263>.
- Freundt KJ, Lieberwirth K, Netz H, et al. 1976. Blood acetaldehyde in alcoholized rats and humans during inhalation of carbon disulphide vapor. *Int Arch Occup Environ Health* 37:35-46. <https://doi.org/10.1007/BF00409362>.
- Fullana A, Font R, Conesa JA, et al. 2000. Evolution of products in the combustion of scrap tires in a horizontal, laboratory scale reactor. *Environ Sci Technol* 34(11):2092-2099. <https://doi.org/10.1021/es990883y>.
- Gandhi DN, Venkatakrishna-Bhatt H. 1993. Carbon disulphide induced sensitivity changes of rat anococcygeus muscle to noradrenaline (NA). *Biomed Environ Sci* 6:223-230.
- Gao Y, Wang S, Yi A, et al. 2014. Activation of lysosomal degradative pathway in spinal cord tissues of carbon disulfide-treated rats. *Chem Biol Interact* 219:76-82. <https://doi.org/10.1016/j.cbi.2014.05.016>.
- Garry VF, Nelson RL, Griffith J, et al. 1990. Preparation for human study of pesticide applicators: Sister chromatid exchanges and chromosome aberrations in cultured human lymphocytes exposed to selected fumigants. *Teratog Carcinog Mutagen* 10(1):21-30. <https://doi.org/10.1002/tcm.1770100104>.
- Gelbke HP, Göen T, Mäurer M, et al. 2009. A review of health effects of carbon disulfide in viscose industry and a proposal for an occupational exposure limit. *Crit Rev Toxicol* 39 (Suppl 2):1-126. <https://doi.org/10.1080/10408440902837967>.
- Gibson JD, Roberts RJ. 1972. Effect of carbon disulfide on liver function in vivo and in the isolated perfused liver. *J Pharmacol Exp Ther* 181(1):176-182. [https://doi.org/10.1016/S0022-3565\(25\)29189-3](https://doi.org/10.1016/S0022-3565(25)29189-3).
- Godderis L, Braeckman L, Vanhoorne M, et al. 2006. Neurobehavioral and clinical effects in workers exposed to CS(2). *Int J Hyg Environ Health* 209(2):139-150. <https://doi.org/10.1016/j.ijheh.2005.09.005>.
- Göen T, Schramm A, Baumeister T, et al. 2014. Current and historical individual data about exposure of workers in the rayon industry to carbon disulfide and their validity in calculating the cumulative dose. *Int Arch Occup Environ Health* 87(6):675-683. <https://doi.org/10.1007/s00420-013-0910-9>.
- Gordy ST, Trumper M. 1938. Carbon disulfide poisoning, with a report of six cases. *JAMA* 110(19):1543-1559. <https://doi.org/10.1001/jama.1938.02790190013005>.
- Gordy ST, Trumper M. 1940. Carbon disulfide poisoning: Report of 21 cases. *Ind Med* 9(5):231-234.
- Gosselin RE, Smith RP, Hodge HC. 1984. Carbon disulfide. In: *Clinical toxicology of commercial products*. 5th ed. Baltimore: Williams and Wilkins, III-90 to III-94.
- Graham DG, Popp JA. 1992a. Addendum to 90-day vapor inhalation toxicity study of carbon disulfide in Fischer 344 rats (ToxiGenics, Inc. study no. 420-0711 A). Subject: Special neuropathological examination. Initial submission: 90-day vapor inhalation toxicity study with carbon disulfide in Fischer-344 rats. Final report with cover letter dated 07/22/92 and attachments. Chemical Industry Institute of Toxicology. Submitted to the U.S. Environmental Protection Agency under TSCA section FYI. 35-68. OTS0000859. FYI-OTS-0892-0859. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0000859.xhtml>. March 2, 2023.
- Graham DG, Popp JA. 1992b. Addendum to 90-day vapor inhalation toxicity study of carbon disulfide in Sprague-Dawley rats (ToxiGenics, Inc. study no. 420-0711 B). Subject: Special

8. REFERENCES

- neuropathological examination. Initial submission: 90-day vapor inhalation toxicity study with carbon disulfide in Fischer-344 rats. Final report with cover letter dated 07/22/92 and attachments. Chemical Industry Institute of Toxicology. Submitted to the U.S. Environmental Protection Agency under TSCA section FYI. 3-34. OTS0000859. FYI-OTS-0892-0859.
<https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0000859.xhtml>. March 2, 2023.
- Graham DG, Amarnath V, Valentine WM, et al. 1995. Pathogenetic studies of hexane and carbon disulfide neurotoxicity. *Crit Rev Toxicol* 25(2):91-112.
<https://doi.org/10.3109/10408449509021609>.
- Guo XM, Tang RH, Qin XY, et al. 2008. Effects of carbon disulfide on the expression and activity of nitric oxide synthase in rat hippocampus. *Chin Med J* 121(24):2553-2556.
<https://doi.org/10.5555/cmj.0366-6999.121.24.p2553.01>.
- Guo Y, Wang W, Dong Y, et al. 2014. Carbon disulfide induces rat testicular injury via mitochondrial apoptotic pathway. *Chemosphere* 108:367-375. <https://doi.org/10.1016/j.chemosphere.2014.01.081>.
- Guo Y, Ji J, Wang W, et al. 2015. Role of endoplasmic reticulum apoptotic pathway in testicular Sertoli cells injury induced by Carbon disulfide. *Chemosphere* 132:70-78.
<https://doi.org/10.1016/j.chemosphere.2015.02.058>.
- Guo Y, Ma Y, Chen G, et al. 2016. The effects of occupational exposure of carbon disulfide on sexual hormones and semen quality of male workers from a chemical fiber factory. *J Occup Environ Med* 58(8):e294-300. <https://doi.org/10.1097/jom.0000000000000823>.
- Hardin BD, Bond GP, Sikov MR, et al. 1981. Testing of selected workplace chemicals for teratogenic potential. *Scand J Work Environ Health* 7(S4):66-75.
- Harry GJ, Graham DG, Valentine WM, et al. 1998. Carbon disulfide neurotoxicity in rats: VIII. Summary. *Neurotoxicology* 19(1):159-161.
- Haworth S, Lawlor T, Mortelmans K, et al. 1983. Salmonella mutagenicity test results for 250 chemicals. *Environ Mutagen* 1(Suppl 1):3-142. <https://doi.org/10.1002/em.2860050703>.
- Hedenstedt A, Rannug U, Ramel C, et al. 1979. Mutagenicity and metabolism studies on 12-thiuram and dithiodicarbamate compounds used as accelerators in the Swedish rubber industry. *Mutat Res* 68:313-325. [https://doi.org/10.1016/0165-1218\(79\)90164-2](https://doi.org/10.1016/0165-1218(79)90164-2).
- Heicklen J, Wood WP, Olszyna KJ, et al. 1971. The reactions of unstable intermediates in the oxidation of CS₂. In: Tuesday CS, ed. *Chemical reactions in the urban atmosphere, proceedings of a symposium, held at General Motors Research Laboratories, Warren, Michigan, 1969*. New York, NY: Elsevier Publishing Co., 191-222.
- Heikes DL. 1987. Purge and trap method for determination of volatile halocarbons and carbon-disulfide in table-ready foods. *J Assoc Off Anal Chem* 70(2):215-226.
<https://doi.org/10.1093/jaoac/70.2.215>.
- Helasova P. 1969. [Observations on a group of children from an area polluted by carbon disulfide and hydrogen sulfide exhalation compared with a control group of children]. *Cesk Hyg* 14:260-265. (Czech)
- Hemminki K, Niemi ML. 1982. Community study of spontaneous abortions: Relation to occupation and air pollution by sulfur dioxide, hydrogen sulfide, and carbon disulfide. *Int Arch Occup Environ Health* 51(1):55-63. <https://doi.org/10.1007/BF00378410>.
- Hernberg S, Tolonen M. 1981. Epidemiology of coronary heart disease among viscose rayon workers. *G Ital Med Lav* 3:49-52.
- Hernberg S, Partanen T, Nordman CH, et al. 1970. Coronary heart disease among workers exposed to carbon disulphide. *Br J Ind Med* 27(4):313-325. <https://doi.org/10.1136/oem.27.4.313>.
- Hernberg S, Nordman CH, Partanen T, et al. 1971. Blood lipids, glucose tolerance and plasma creatinine in workers exposed to carbon disulphide. *Work Environ Health* 8:11-16.
- Hernberg S, Nurminen M, Tolonen M. 1973. Excess mortality from coronary heart disease in viscose rayon workers exposed to carbon disulfide. *Work Environ Health* 10(2):93-99.
- Hernberg S, Tolonen M, Nurminen M. 1976. Eight-year follow-up of viscose rayon workers exposed to carbon disulfide. *Scand J Work Environ Health* 2(1):27-30. <https://doi.org/10.5271/sjweh.2824>.

8. REFERENCES

- Herr DW, Vo KT, Morgan DL, et al. 1998. Carbon disulfide neurotoxicity in rats: VI. Electrophysiological examination of caudal tail nerve compound action potentials and nerve conduction velocity. *Neurotoxicology* 19(1):129-146.
- Hiddemen JW, Waritz RS, Clayton JW. 1966. Acute inhalation toxicity progress report for study of carbon disulphide and hexafluoroacetoneimine in male CHR-CD rats with cover letter dated 05/11/94. E.I. DuPont de Nemours & Co. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8. OTS0557261. 86940000851. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0557261.xhtml>. July 28, 2022.
- Hines ME, Pelletier RE, Crill PM. 1993. Emissions of sulfur gases from marine and freshwater wetlands of the Florida Everglades: Rates and extrapolation using remote sensing. *J Geophys Res* 98(5):8991-8999. <https://doi.org/10.1029/92JD03019s>.
- Hirata M, Ogawa Y, Okayama A, et al. 1992. Changes in auditory brainstem response in rats chronically exposed to carbon disulfide. *Arch Toxicol* 66(5):344-338. <https://doi.org/10.1007/BF01973628>.
- Hirata M, Ogawa Y, Goto S. 1996. A cross-sectional study on nerve conduction velocities among workers exposed to carbon disulphide. *Med Lav* 87(1):29-34.
- Hoffmann P. 1987. Cardiotoxicity testing of organic solvents by coronary artery ligation in closed-chest rats. *Arch Toxicol* 61(1):79-82. <https://doi.org/10.1007/BF00324553>.
- Hoffmann P, Klapperstück M. 1990. Effects of carbon disulfide on cardiovascular function after acute and subacute exposure of rats. *Biomed Biochim Acta* 49(1):121-128.
- Holson JF. 1992. An assessment of reproduction in female rats exposed to carbon disulfide via inhalation with cover letter dated 04/13/94. ELF Atochem North America, Inc. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8D. OTS0557196. 86940000786. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0557196.xhtml>. July 28, 2022.
- Hu H, Mylon SE, Benoit G. 2007. Volatile organic sulfur compounds in a stratified lake. *Chemosphere* 67(5):911-919. <https://doi.org/10.1016/j.chemosphere.2006.11.012>.
- Huang CC. 2004. Carbon disulfide neurotoxicity: Taiwan experience. *Acta Neurol Taiwan* 13(1):3-9.
- Huang CC, Yen TC, Shih TS, et al. 2004. Dopamine transporter binding study in differentiating carbon disulfide induced parkinsonism from idiopathic parkinsonism. *Neurotoxicology* 25(3):341-347. [https://doi.org/10.1016/s0161-813x\(03\)00147-5](https://doi.org/10.1016/s0161-813x(03)00147-5).
- Huang X, Zhou Y, Ma J, et al. 2012. Nitric oxide mediated effects on reproductive toxicity caused by carbon disulfide in male rats. *Environ Toxicol Pharmacol* 34(3):679-687. <https://doi.org/10.1016/j.etap.2012.10.001>.
- Huang H, Wang Z, Dai C, et al. 2022. Volatile organic compounds emission in the rubber products manufacturing processes. *Environ Res* 212(Pt C):113485. <https://doi.org/10.1016/j.envres.2022.113485>.
- Hueper WC. 1936. Etiologic studies on the formation of skin blisters in viscose workers. *J Ind Hyg Toxicol* 18:432-447.
- IARC. 2023. Agents classified by the IARC Monographs, volumes 1-132. International Agency for Research on Cancer. <https://monographs.iarc.fr/list-of-classifications>. January 29, 2023.
- IARC. 2025. Agents classified by the IARC Monographs, volumes 1-137. International Agency for Research on Cancer. <https://monographs.iarc.fr/list-of-classifications>. March 4, 2025.
- Inoue K, Ritz B, Brent GA, et al. 2020. Association of subclinical hypothyroidism and cardiovascular disease with mortality. *JAMA Netw Open* 3(2):e1920745. <https://doi.org/10.1001/jamanetworkopen.2019.20745>.
- IRIS. 2002. Carbon disulfide; CASRN 75-15-0. Integrated risk information system: Chemical assessment summary. Cincinnati, OH: U.S. Environmental Protection Agency. https://iris.epa.gov/static/pdfs/0217_summary.pdf. July 21, 2022.
- Järvisalo J, Kilpio J, Elovaara E, et al. 1977. Deleterious effects of subacute carbon disulphide exposure on mouse liver. *Biochem Pharmacol* 26:1521-1524. [https://doi.org/10.1016/0006-2952\(77\)90426-9](https://doi.org/10.1016/0006-2952(77)90426-9).
- J-CHECK. 2025a. #32: Bioaccumulation: aquatic sediment [CASRN 75-15-0]. Japan Chemicals Collaborative Knowledge database. Tokyo, Japan: National Institute of Technology and Evaluation.

8. REFERENCES

- https://www.nite.go.jp/chem/jcheck/template.action?ano=27664&mno=1-0172&cno=75-15-0&request_locale=en. February 21, 2025.
- J-CHECK. 2025b. #28: Biodegradation in water: screening tests [CASRN 75-15-0]. Japan Chemicals Collaborative Knowledge database. Tokyo, Japan: National Institute of Technology and Evaluation. https://www.nite.go.jp/chem/jcheck/template.action?ano=27664&mno=1-0172&cno=75-15-0&request_locale=en. February 21, 2025.
- Jhun HJ, Cho SI, Kim MJ, et al. 2007. Electrocardiographic features of Korean carbon disulfide poisoned subjects after discontinuation of exposure. *Int Arch Occup Environ Health* 80(6):547-551. <https://doi.org/10.1007/s00420-006-0162-z>.
- Jhun HJ, Lee SY, Yim SH, et al. 2009. Metabolic syndrome in carbon disulfide-poisoned subjects in Korea: does chemical poisoning induce metabolic syndrome? *Int Arch Occup Environ Health* 82(7):827-832. <https://doi.org/10.1007/s00420-008-0363-8>.
- Johnson BL, Boyd J, Burg JR, et al. 1983. Effects on the peripheral nervous system of worker's exposure to carbon disulfide. *Neurotoxicology* 4(1):53-65.
- Kamal AA, Ahmed A, Saied K, et al. 1991. Quantitative evaluation of ECG components of workers exposed to carbon disulfide. *Environ Health Perspect* 90:301-304. <https://doi.org/10.1289/ehp.90-1519496>.
- Kamat SR. 1994. Comparative medical impact study of viscose rayon workers and adjoining community in relation to accidental leak. *Chem Eng World* 29(2):107-111.
- Kamis A, Cao R, He Y, et al. 2021. Predicting lung cancer in the United States: A multiple model examination of public health factors. *Int J Environ Res Public Health* 18(11):6127. <https://doi.org/10.3390/ijerph18116127>.
- Kanada M, Miyagawa M, Sato M, et al. 1994. Neurochemical profile of effects of 28 neurotoxic chemicals on the central nervous system in rats (1) Effects of oral administration on brain contents of biogenic amines and metabolites. *Ind Health* 32(3):145-164. <https://doi.org/10.2486/indhealth.32.145>.
- Kanda K, Tsuruta H, Minami K. 1995. Emissions of biogenic sulfur gases from maize and wheatfields. *Soil Sci Plant Nutr* 41:1-8. <https://doi.org/10.1080/00380768.1995.10419553>.
- Keil DE, Padgett EL, Barnes DB, et al. 1996. Role of decomposition products in sodium methylthiocarbamate-induced immunotoxicity. *J Toxicol Environ Health* 47(5):479-492. <https://doi.org/10.1080/009841096161627>.
- Khalil MA, Rasmussen RA. 1984. Global sources, lifetimes and mass balances of carbonyl sulfide (OCS) and carbon disulfide (CS₂) in the earth's atmosphere. *Atmos Environ* 18(9):1805-1813. [https://doi.org/10.1016/0004-6981\(84\)90356-1](https://doi.org/10.1016/0004-6981(84)90356-1).
- Kim JS, Lim HS, Cheong HK, et al. 2000. Validity and cost-effectiveness of diagnostic procedures in CS₂ poisoning. *Ind Health* 38(4):385-395. <https://doi.org/10.2486/indhealth.38.385>.
- Kivistö H. 2000. TTCA measurements in biomonitoring of low-level exposure to carbon disulphide. *Int Arch Occup Environ Health* 73(4):263-269. <https://doi.org/10.1007/s004200050426>.
- Kivistö H, Elovaara E, Riihimäki V, et al. 1995. Effect of cytochrome P450 isozyme induction and glutathione depletion on the metabolism of CS₂ to TTCA in rats. *Arch Toxicol* 69:185-190. <https://doi.org/10.1007/s002040050156>.
- Kotseva KP, De Bacquer D. 2000. Cardiovascular effects of occupational exposure to carbon disulphide. *Occup Med* 50(1):43-47. <https://doi.org/10.1093/occmed/50.1.43>.
- Kotseva K, Braeckman L, De Bacquer D, et al. 2001. Cardiovascular effects in viscose rayon workers exposed to carbon disulfide. *Int J Occup Environ Health* 7(1):7-13. <https://doi.org/10.1179/107735201800339713>.
- Kramer C, Mochalski P, Unterkofler K, et al. 2016. Prediction of blood:air and fat:air partition coefficients of volatile organic compounds for the interpretation of data in breath gas analysis. *J Breath Res* 10(1):017103. <https://doi.org/10.1088/1752-7155/10/1/017103>.

8. REFERENCES

- Kuang H, Li Z, Lv X, et al. 2021. Exposure to volatile organic compounds may be associated with oxidative DNA damage-mediated childhood asthma. *Ecotoxicol Environ Saf* 210:111864. <https://doi.org/10.1016/j.ecoenv.2020.111864>.
- Kuo HW, Lai JS, Lin M, et al. 1997. Effects of exposure to carbon disulfide (CS₂) on electrocardiographic features of ischemic heart disease among viscose rayon factory workers. *Int Arch Occup Environ Health* 70(1):61-66. <https://doi.org/10.1007/s004200050187>.
- LaKind JS, Burns CJ, Johnson GT, et al. 2023. Epidemiology for risk assessment: The US Environmental Protection Agency quality considerations and the Matrix. *Hyg Environ Health Adv* 6:100059. <https://doi.org/10.1016/j.heha.2023.100059>.
- Lancranjan I, Sukmansky M, Stanuca L, et al. 1972. Study of the thyroid function in chronic carbon disulphide poisoning. *Med Lav* 63(3):123-125.
- Lay MDS, Sauerhoff MW, Saunders DR. 2012. Carbon disulfide. In: *Ullmann's encyclopedia of industrial chemistry*. Vol. 6. Germany: Wiley-VCH Verlag GmbH & Co., 667-678.
- LBNL. 2011. Memorandum: Lawrence Berkeley National Laboratory October 2010 chamber study report. Berkeley, CA: Lawrence Berkeley National Laboratory. LBNL-3986E. https://www.cpssc.gov/s3fs-public/pdfs/blk_media_lblreport.pdf. July 26, 2023.
- Le JY, Fu XM. 1996. Human sperm chromosome analysis-study on human sperm chromosome mutagenesis induced by carbon disulfide. *Biomed Environ Sci* 9(1):37-40.
- Lee BL, Yang XF, New AL, et al. 1995. Liquid-chromatographic determination of urinary 2-thiothiazolidine-4-carboxylic acid, a biomarker of carbon-disulfide exposure. *J Chromatogr B Biomed Appl* 668:265-272. [https://doi.org/10.1016/0378-4347\(95\)00086-x](https://doi.org/10.1016/0378-4347(95)00086-x).
- Lefaux R. 1968. Carbon disulphide. In: *Practical toxicology of plastics*. Cleveland, OH: CRC Press, Inc., 117-119.
- Lehotzky K, Szeberenyi JM, Ungvary G, et al. 1985. Behavioural effects of prenatal exposure to carbon disulphide and to aromatol in rats. *Arch Toxicol Suppl* 8:442-446. https://doi.org/10.1007/978-3-642-69928-3_100.
- Lennartz ST, Marandino CA, von Hobe M, et al. 2020. Marine carbonyl sulfide (OCS) and carbon disulfide (CS₂): a compilation of measurements in seawater and the marine boundary layer. *Earth Syst Sci Data* 12:591-609. <https://doi.org/10.5194/essd-12-591-2020>.
- Lennartz ST, Gauss M, von Hobe M, et al. 2021. Monthly resolved modelled oceanic emissions of carbonyl sulphide and carbon disulphide for the period 2000-2019. *Earth Syst Sci Data* 13(5):2095-2110. <https://doi.org/10.5194/essd-13-2095-2021>.
- Lewey FH, Alpers BJ, Bellet S, et al. 1941. Experimental chronic carbon disulfide poisoning in dogs. *J Ind Hyg Toxicol* 23(9):415-436.
- Lewis JG, Graham DG, Valentine WM, et al. 1999. Exposure of C57BL/6 mice to carbon disulfide induces early lesions of atherosclerosis and enhances arterial fatty deposits induced by a high fat diet. *Toxicol Sci* 49(1):124-132. <https://doi.org/10.1093/toxsci/49.1.124>.
- Li YC, Hsu HL, Chun Y, et al. 2021a. Machine learning-driven identification of early-life air toxic combinations associated with childhood asthma outcomes. *J Clin Invest* 131(22):e152088. <https://doi.org/10.1172/JCI152088>.
- Li R, Han Z, Shen H, et al. 2021b. Emission characteristics of odorous volatile sulfur compound from a full-scale sequencing batch reactor wastewater treatment plant. *Sci Total Environ* 776:145991. <https://doi.org/10.1016/j.scitotenv.2021.145991>.
- Liang YX, Glowa JR, Dewes PB. 1983. Behavioral toxicology of volatile organic solvents. III. Acute and subacute effects of carbon disulfide exposure on the behavior of mice. *J Am Coll Toxicol* 2(6):379-389. <https://doi.org/10.3109/10915818309140726>.
- Liss GM, Finkelstein MM. 1996. Mortality among workers exposed to carbon disulfide. *Arch Environ Health* 51(3):193-200. <https://doi.org/10.1080/00039896.1996.9936016>.
- Liu Z, Kang K, Shan S, et al. 2023. Chronic carbon disulfide exposure induces parkinsonian pathology via alpha-synuclein aggregation and necrosome complex interaction. *iScience* 26(10):107787. <https://doi.org/10.1016/j.isci.2023.107787>.

8. REFERENCES

- Liu Z, Qiang Y, Shan S, et al. 2024. Carbon disulfide induces accumulation of TDP-43 in the cytoplasm and mitochondrial dysfunction in rat spinal cords. *Cereb Cortex* 34:1-10. <https://doi.org/10.1093/cercor/bhad526>.
- Llorens J. 2013. Toxic neurofilamentous axonopathies - accumulation of neurofilaments and axonal degeneration. *J Intern Med* 273(5):478-489. <https://doi.org/10.1111/joim.12030>.
- Logue JM, Small MJ, Stern D, et al. 2010. Spatial variation in ambient air toxics concentrations and health risks between industrial-influenced, urban, and rural sites. *J Air Waste Manag Assoc* 60(3):271-286. <https://doi.org/10.3155/1047-3289.60.3.271>.
- Logue JM, Small MJ, Robinson AL. 2011. Evaluating the national air toxics assessment (NATA): Comparison of predicted and measured air toxics concentrations, risks, and sources in Pittsburgh, Pennsylvania. *Atmos Environ* 45(2):476-484. <https://doi.org/10.1016/j.atmosenv.2010.09.053>.
- Lovegren NV, Fisher GS, Legendre MG, et al. 1979. Volatile constituents of dried legumes. *J Agric Food Chem* 27(4):851-853. <https://doi.org/10.1021/jf60224a055>.
- Lovelock JE. 1974. CS₂ and the natural sulphur cycle. *Nature* 248:625-626.
- Luo JC, Shih TS, Chang CP, et al. 2011. Blood oxidative stress in Taiwan workers exposed to carbon disulfide. *Am J Ind Med* 54(8):637-645. <https://doi.org/10.1002/ajim.20971>.
- Lyle WH. 1981. Mortality of the 1957-68 cohort of employees in a viscose factory up to 31 December 1978. *G Ital Med Lav* 3:53-55.
- Mack T, Freundt KJ, Henschler D. 1974. Inhibition of oxidative n-demethylation in man by low doses of inhaled carbon disulphide. *Biochem Pharmacol* 23:607-614. [https://doi.org/10.1016/0006-2952\(74\)90625-X](https://doi.org/10.1016/0006-2952(74)90625-X).
- MacMahon B, Monson RR. 1988. Mortality in the US rayon industry. *J Occup Med* 30(9):698-705.
- Magos L. 1970. The effects of carbon disulphide exposure on brain catecholamines in rats. *Br J Pharmacol* 39(1):26-33. <https://doi.org/10.1111/j.1476-5381.1970.tb09552.x>.
- Magos L, Butler WH. 1972. Effect of phenobarbitone and starvation on hepatotoxicity in rats exposed to carbon disulphide vapour. *Br J Ind Med* 29(1):95-98. <https://doi.org/10.1136/oem.29.1.95>.
- Magos L, Butler WH, White IN. 1973. Hepatotoxicity of CS₂ in rats: Relation to postexposure liver weight and pre-exposure cytochrome P-450 level. *Biochem Pharmacol* 22:992-994. [https://doi.org/10.1016/0006-2952\(73\)90226-8](https://doi.org/10.1016/0006-2952(73)90226-8).
- Magos L, Green A, Jarvis JA. 1974. Half life of CS₂ in rats in relation to its effect on brain catecholamines. *Int Arch Arbeitsmed* 32(4):289-296. <https://doi.org/10.1007/BF02178967>.
- Mahmudur Rahman M, Kim KH. 2012. Release of offensive odorants from the combustion of barbecue charcoals. *J Hazard Mater* 215-216:233-242. <https://doi.org/10.1016/j.jhazmat.2012.02.055>.
- Mann CJ. 2003. Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emerg Med J* 20(1):54-60. <https://doi.org/10.1136/emj.20.1.54>.
- Marchand M, Termonia M, Caprais JC, et al. 1994. Purge and trap GC-MS analysis of volatile organic compounds from the Guaymas Basin hydrothermal site (Gulf of California). *Analusis* 22:1326-1331.
- Masuda Y, Yasoshima M. 1988. Loss of 3-methylcholanthrene-inducible form of cytochrome P-450 in liver microsomes following administration of carbon disulfide in C57BL/6 Cr mice. *Biochem Pharmacol* 37(12):2363-2371. [https://doi.org/10.1016/0006-2952\(88\)90362-0](https://doi.org/10.1016/0006-2952(88)90362-0).
- Masuda Y, Yasoshima M, Nakayama N. 1986. Early, selective and reversible suppression of cytochrome P-450-dependent monooxygenase of liver microsomes following the administration of low doses of carbon disulfide in mice. *Biochem Pharmacol* 35(22):3941-3947. [https://doi.org/10.1016/0006-2952\(86\)90008-0](https://doi.org/10.1016/0006-2952(86)90008-0).
- May K. 1992. Carbon disulphide in vapour phase: Assessment of mutagenic potential in histidine auxotrophs of *Salmonella typhimurium* (the Ames test), with cover letter dated 05/24/94 (sanitized). Confidential. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8D. OTS0557434. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0557434.xhtml>. July 28, 2022.

8. REFERENCES

- MCA. 1968. Research on chemical odors: Part 1. Odor threshold for 53 commercial chemicals. Washington, DC: Manufacturing Chemists Association. Arthur D. Little, Inc.
- McKee RW, Kiper C, Fountain JM, et al. 1943. A solvent vapor, carbon disulfide: absorption, elimination, metabolism and mode of action. *J Am Med Assoc* 122(4):217-222. <https://doi.org/10.1001/jama.1943.02840210009003>.
- McKenna MJ, DiStefano V. 1977. Carbon disulfide: I. The metabolism of inhaled carbon disulfide in the rat. *J Pharmacol Exp Ther* 202(2):245-252. [https://doi.org/10.1016/S0022-3565\(25\)30954-7](https://doi.org/10.1016/S0022-3565(25)30954-7).
- MDHHS. 2023. Health consultation: Evaluation of reduced sulfur compounds (RSCs) and volatile organic compounds (VOCs) in communities near Graphic Packaging International, LLC. and Kalamazoo Water Reclamation plant. Lansing, MI: Michigan Department of Health and Human Services. <https://www.michigan.gov/mdhhs/-/media/Project/Websites/mdhhs/Safety-and-Injury-Prevention/Environmental-Health/Health-Assessments/Documents/Kalamazoo-Air-Quality-Health-Consultation.pdf?> November 7, 2023.
- Merigan WH, Wood RW, Zehl D, et al. 1988. Carbon disulfide effects on the visual system: I. Visual thresholds and ophthalmoscopy. *Invest Ophthalmol Vis Sci* 29(4):512-518.
- Meuling WJ, Bragt PC, Braun CL. 1990. Biological monitoring of carbon disulfide. *Am J Ind Med* 17(2):247-257. <https://doi.org/10.1002/ajim.4700170209>.
- Micu D, Mihailescu E, Vilau C, et al. 1985. The value of some cytoenzymochemical investigations of the leukocytes and platelets in estimating the effects of occupational exposure to benzene, vinyl chloride and carbon disulfide. *Rev Roum Med Intern* 23(2):115-120.
- Miermans CJ, van der Velde LE, Frintrop PC. 2000. Analysis of volatile organic compounds, using the purge and trap injector coupled to a gas chromatograph/ion-trap mass spectrometer: review of the results in Dutch surface water of the Rhine, Meuse, Northern Delta Area and Westerscheldt, over the period 1992-1997. *Chemosphere* 40(1):39-48. [https://doi.org/10.1016/s0045-6535\(99\)00229-5](https://doi.org/10.1016/s0045-6535(99)00229-5).
- Moorman MP, Sills RC, Collins BJ, et al. 1998. Carbon disulfide neurotoxicity in rats: II. Toxicokinetics. *Neurotoxicology* 19(1):89-97.
- Morvai V, Szakmáry E, Ungváry G. 2005. The effects of carbon disulfide and ethanol on the circulatory system of rats. *J Toxicol Environ Health A* 68(10):797-809. <https://doi.org/10.1080/15287390590930144>.
- Moser VC, Phillips PM, Morgan DL, et al. 1998. Carbon disulfide neurotoxicity in rats: VII. Behavioral evaluations using a functional observational battery. *Neurotoxicology* 19(1):147-157.
- Mumtaz MM, Ray M, Crowell SR, et al. 2012a. Translational research to develop a human PBPK models tool kit-volatile organic compounds (VOCs). *J Toxicol Environ Health A* 75(1):6-24. <https://doi.org/10.1080/15287394.2012.625546>.
- Mumtaz M, Fisher J, Blount B, et al. 2012b. Application of physiologically based pharmacokinetic models in chemical risk assessment. *J Toxicol* 2012:904603. <https://doi.org/10.1155/2012/904603>.
- NAS/NRC. 2006. Human biomonitoring for environmental chemicals. Washington, DC: The National Academies Press, National Research Council. <https://doi.org/10.17226/11700>.
- Nash SD, Ashley P, Burgess BA, et al. 1981. Upper respiratory tract irritation study of carbon disulfide in rats with cover letter dated 05/11/94. E.I. DuPont de Nemours & Co. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8D. OTS0557260. 86940000850. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0557260.xhtml>. July 28, 2022.
- NCTR. 1984a. Teratologic evaluation of carbon disulfide (CAS No. 75-15-0) administered to CD rats on gestational days 6 through 15. Research Triangle Park, NC: National Center for Toxicological Research. PB84192343. NCTR222802031(C). <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB84192343.xhtml>. June 14, 2022.
- NCTR. 1984b. Teratologic evaluation of carbon disulfide (CAS No. 75-15-0) administered to New Zealand white rabbits on gestational days 6 through 19. Research Triangle Park, NC: National Center for Toxicological Research. PB84192350. NCTR222802031. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB84192350.xhtml>. June 14, 2022.

8. REFERENCES

- NEMI. 2023. Carbon disulfide. National Environmental Methods Index. U.S. Environmental Protection Agency.
https://www.nemi.gov/methods/analyte_results/?media_name=&source=&instrumentation=&analyte_name=carbon+disulfide&category=. July 25, 2023.
- Newhook R, Meek ME, Walker M. 2001. Carbon disulfide: Hazard characterization and exposure-response analysis. *J Environ Sci Health, Part C* 19(1):125-160. <https://doi.org/10.1081/GNC-100103583>.
- NFPA. 1986. Carbon disulfide. In: *Fire protection guide on hazardous materials*. 9th ed. Boston, MA: National Fire Protection Association, 325M-324.
- NIOSH. 1977. Criteria for a recommended standard. Occupational exposure to carbon disulfide. Cincinnati, OH: National Institute for Occupational Safety and Health. PB274199. NIOSH-77-156. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB274199.xhtml>. July 26, 2023.
- NIOSH. 1978. Occupational health guideline for carbon disulfide. National Institute for Occupational Safety and Health. <https://www.cdc.gov/niosh/docs/81-123/pdfs/0104.pdf>. July 26, 2023.
- NIOSH. 1980. Teratogenic-mutagenic risks of workplace contaminants: Trichloroethylene, perchloroethylene, and carbon disulfide. Cincinnati, OH: National Institute for Occupational Safety and Health. PB82185075.
<https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB82185075.xhtml>. March 1, 2023.
- NIOSH. 1983. Paternal exposure to carbon disulfide and spouse's pregnancy experience. Cincinnati, OH: National Institute for Occupational Safety and Health. PB85220754.
<https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB85220754.xhtml>. July 23, 2023.
- NIOSH. 1984a. Health effects of occupational exposure to carbon disulfide. Cincinnati, OH: National Institute for Occupational Safety and Health. PB85110229.
<https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB85110229.xhtml>. July 27, 2023.
- NIOSH. 1984b. Carbon disulfide: method 1600. NIOSH manual of analytical methods: volume 1. Cincinnati, OH: National Institute for Occupational Safety and Health. PB85179018. DHHS Publ No 84-100. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB85179018.xhtml>. July 27, 2023.
- NIOSH. 2018. Appendix G: 1989 air contaminants update project - exposure limits not in effect. NIOSH pocket guide to chemical hazards. National Institute for Occupational Safety and Health. <https://www.cdc.gov/niosh/npg/nengapdxg.html>. May 28, 2023.
- NIOSH. 2019. Carbon disulfide. NIOSH pocket guide to chemical hazards. National Institute for Occupational Safety and Health. <https://www.cdc.gov/niosh/npg/npgd0104.html>. May 28, 2023.
- Nishiwaki Y, Takebayashi T, O'Uchi T, et al. 2004. Six year observational cohort study of the effect of carbon disulphide on brain MRI in rayon manufacturing workers. *Occup Environ Med* 61(3):225-232. <https://doi.org/10.1136/oem.2002.006932>.
- NLM. 2023. Compound summary: Carbon disulfide. PubChem. U.S. National Library of Medicine. <https://pubchem.ncbi.nlm.nih.gov/compound/6348>. July 26, 2023.
- NLM. 2024a. Compound summary: Raphanusamic acid. PubChem. U.S. National Library of Medicine. <https://pubchem.ncbi.nlm.nih.gov/compound/3035791>. August 21, 2024.
- NLM. 2024b. Compound summary: Creatinine. PubChem. U.S. National Library of Medicine. <https://pubchem.ncbi.nlm.nih.gov/compound/588>. August 21, 2024.
- NTP. 2013. Draft OHAT approach for systematic review and evidence integration for literature-based health assessments - February 2013. National Toxicology Program. https://ntp.niehs.nih.gov/ntp/ohat/evaluationprocess/draftohatapproach_february2013.pdf. May 28, 2024.
- NTP. 2015. OHAT risk of bias rating tool for human and animal studies. National Toxicology Program. https://ntp.niehs.nih.gov/ntp/ohat/pubs/riskofbiastool_508.pdf. March 19, 2019.
- NTP. 2021. CASRN index. Report on carcinogens. National Toxicology Program. <https://ntp.niehs.nih.gov/pubhealth/roc/index-1.html#P>. January 10, 2022.

8. REFERENCES

- Nurminen M, Hernberg S. 1985. Effects of intervention on the cardiovascular mortality of workers exposed to carbon disulfide: A 15-year follow-up. *Br J Ind Med* 41(1):32-35. <https://doi.org/10.1136/oem.42.1.32>.
- Nurminen N, Mutanen P, Tolonen H, et al. 1982. Quantitated effects of carbon disulfide exposure, elevated blood pressure and aging on coronary mortality. *Am J Epidemiol* 115(1):107-118. <https://doi.org/10.1093/oxfordjournals.aje.a113265>.
- NRC. 2009. Carbon disulfide. Acute exposure guideline levels for selected airborne chemicals: Volume 7. National Research Council. <https://www.ncbi.nlm.nih.gov/books/NBK214898/>. April 22, 2025.
- O'Dell K, Hornbrook RS, Permar W, et al. 2020. Hazardous air pollutants in fresh and aged western US wildfire smoke and implications for long-term exposure. *Environ Sci Technol* 54(19):11838-11847. <https://doi.org/10.1021/acs.est.0c04497>.
- Omae K, Takebayashi T, Nomiyama T, et al. 1998. Cross sectional observation of the effects of carbon disulphide on arteriosclerosis in rayon manufacturing workers. *Occup Environ Med* 55(7):468-472. <https://doi.org/10.1136/oem.55.7.468>.
- Opacka J, Baranski B, Wronska-Nofer T. 1984. Effect of alcohol intake on some disturbances induced by chronic exposure to carbon disulphide in rats. I. Behavioural alterations. *Toxicol Lett* 23:91-97. [https://doi.org/10.1016/0378-4274\(84\)90014-6](https://doi.org/10.1016/0378-4274(84)90014-6).
- OSHA. 2018. Preventing hearing loss caused by chemical (ototoxicity) and noise exposure. Occupational Safety and Health Administration. <https://www.cdc.gov/niosh/docs/2018-124/pdfs/2018-124.pdf?id=10.26616/NIOSH-PUB2018124>. July 27, 2023.
- OSHA. 2022. Carbon disulfide. OSHA occupational chemical database. Occupational Safety and Health Administration. <https://www.osha.gov/chemicaldata/574>. July 27, 2023.
- OSHA. 2023a. Occupational safety and health standards. Subpart Z - Toxic and hazardous substances. Air contaminants. Table Z-2. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1910.1000. <https://www.govinfo.gov/content/pkg/CFR-2023-title29-vol6/pdf/CFR-2023-title29-vol6-sec1910-1000.pdf>. March 4, 2025.
- OSHA. 2023b. Occupational safety and health standards for shipyard employment. Subpart Z - Toxic and hazardous substances. Air contaminants. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1915.1000. <https://www.govinfo.gov/content/pkg/CFR-2023-title29-vol7/pdf/CFR-2023-title29-vol7-sec1915-1000.pdf>. March 4, 2025.
- OSHA. 2023c. Safety and health regulations for construction. Subpart D - Occupational health and environment controls. Gases, vapors, fumes, dusts, and mists. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1926.55. <https://www.govinfo.gov/content/pkg/CFR-2023-title29-vol8/pdf/CFR-2023-title29-vol8-sec1926-55.pdf>. March 4, 2025.
- Paluch EA. 1948. Two outbreaks of carbon disulfide poisoning in rayon staple fiber plants in Poland. *J Ind Hyg Toxicol* 30(1):37-42.
- Pappuswamy M, Sundaram R, Kuppanna HM, et al. 2018. Carbon disulfide (CS₂) induced chromosomal alterations and apoptosis in circulated blood lymphocytes of personnel working in viscose industry. *Asian Pac J Cancer Biol* 3(1):17-24. <https://doi.org/10.31557/apjcb.2018.3.1.17-24>.
- Pappuswamy M, Chaudhary A, Meyyazhagan A, et al. 2023. DNA damage on buccal epithelial cells, personal working in the rubber industry occupationally exposed to carbon disulfide (CS₂). *Asian Pac J Cancer Prev* 24(2):357-361. <https://doi.org/10.31557/APJCP.2023.24.2.357>.
- Park D, Ha EK, Jung H, et al. 2024. Associations of personal urinary volatile organic compounds and lung function in children. *J Asthma* 61(8):801-807. <https://doi.org/10.1080/02770903.2024.2303770>.
- Pellizzari ED, Hartwell TD, Harris BS, et al. 1982. Purgeable organic compounds in mother's milk. *Bull Environ Contam Toxicol* 28:322-328. <https://doi.org/10.1007/BF01608515>.

8. REFERENCES

- Peplowska B, Szeszenia-Dabrowska N, Sobala W, et al. 1996. A mortality study of workers with reported chronic occupational carbon disulfide poisoning. *Int J Occup Med Environ Health* 9(4):291-299.
- Pergal M, Vukojevic N, Cirin-Popov N, et al. 1972a. Carbon disulfide metabolites excreted in the urine of exposed workers. I. Isolation and identification of 2-mercapto-2-thiazolinone-5. *Arch Environ Health* 25(1):38-41. <https://doi.org/10.1080/00039896.1972.10666132>.
- Pergal M, Vukojevic N, Djuric D. 1972b. Carbon disulfide metabolites excreted in the urine of exposed workers. II. Isolation and identification of thiocarbamide. *Arch Environ Health* 25(1):42-44. <https://doi.org/10.1080/00039896.1972.10666133>.
- Peters HA, Levine RL, Matthews CG, et al. 1982. Carbon disulfide-induced neuropsychiatric changes in grain storage workers. *Am J Ind Med* 3(4):373-391. <https://doi.org/10.1002/ajim.4700030404>.
- Peters HA, Levine RL, Matthews CG, et al. 1988. Extrapyramidal and other neurologic manifestations associated with carbon disulfide fumigant exposure. *Arch Neurol* 45:537-540. <https://doi.org/10.1001/archneur.1988.00520290069016>.
- Phillips. 1983a. 90-Day vapor inhalation toxicity study of carbon disulfide in Fischer 344 rats with cover letter dated 03/24/94. Phillips Petroleum Company. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8D. OTS0572371. 86940000268.
- Phillips. 1983b. 90-Day vapor inhalation toxicity study of carbon disulfide in Sprague-Dawley rats with cover letter dated 03/24/1994. Phillips Petroleum Company. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8. OTS0572369. 86940000266. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/OTS0572369.xhtml>. July 28, 2022.
- Phillips. 1983c. 90-Day vapor inhalation toxicity study of carbon disulfide in B6C3F1 mice with cover letter dated 03/24/94. Phillips Petroleum Company. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8D. OTS0572370. 86940000267.
- Piluk J, Hartel PG, Haines BL. 1998. Production of carbon disulfide (CS₂) from L-djenkolic acid in the roots of *Mimosa pudica* L. *Plant Soil* 200(1):27-32. <https://doi.org/10.1023/a:1004212311131>.
- Plas C, Wimmer K, Holubar P, et al. 1993. Degradation of carbon disulphide by a *Thiobacillus* isolate. *Appl Microbial Biotechnol* 38:820-823. <https://doi.org/10.1007/BF00167151>.
- Prerovska I, Drdkova S. 1967. [Long-term effect of industrial noxae on exposed workers with respect to atherosclerosis.]. *Cas Lek Cesk* 106(28):754-759. (Czech)
- Price B, Berner T, Henrich RT, et al. 1996. A benchmark concentration for carbon disulfide: analysis of the NIOSH carbon disulfide exposure database. *Regul Toxicol Pharmacol* 24(2 Pt 1):171-176. <https://doi.org/10.1006/rtph.1996.0122>.
- Printemps N, Le Magueresse-Battistoni B, Mhaouty-Kodja S, et al. 2022. How to differentiate general toxicity-related endocrine effects from endocrine disruption: Systematic review of carbon disulfide data. *Int J Mol Sci* 23(6):3153. <https://doi.org/10.3390/ijms23063153>.
- Qingfen T, Xirang G, Weijing Y, et al. 1999. An experimental study on damage of retina function due to toxicity of carbon disulfide and lipid peroxidation. *Acta Ophthalmol Scand* 77(3):298-301. <https://doi.org/10.1034/j.1600-0420.1999.770310.x>.
- Raitta C, Tolonen M. 1975. Ocular pulse wave in workers exposed to carbon disulfide. *Albrecht von Graefes Arch Klin Exp Ophthalmol* 195(3):149-154. <https://doi.org/10.1007/BF00410466>.
- Raitta C, Tolonen M, Nurminen M. 1974. Microcirculation of ocular fundus in viscose rayon workers exposed to carbon disulfide. *Albrecht von Graefes Arch Klin Exp Ophthalmol* 191(3):151-164. <https://doi.org/10.1007/BF00414942>.
- Raitta C, Teir H, Tolonen M, et al. 1981. Impaired color discrimination among viscose rayon workers exposed to carbon disulfide. *J Occup Med* 23(3):189-192.
- Rebert CS, Becker E. 1986. Effects of inhaled carbon disulfide on sensory-evoked potentials of Long-Evans rats. *Neurobehav Toxicol Teratol* 8(5):533-541.
- Reinhardt F, Drexler H, Bickel A, et al. 1997a. Electrophysiological investigation of central, peripheral and autonomic nerve function in workers with long-term low-level exposure to carbon disulphide in

8. REFERENCES

- the viscose industry. *Int Arch Occup Environ Health* 70(4):249-256.
<https://doi.org/10.1007/s004200050215>.
- Reinhardt F, Drexler H, Bickel A, et al. 1997b. Neurotoxicity of long-term low-level exposure to carbon disulphide: results of questionnaire, clinical neurological examination and neuropsychological testing. *Int Arch Occup Environ Health* 69(5):332-338. <https://doi.org/10.1007/s004200050156>.
- RePORTER. 2025. Carbon disulfide. Research Portfolio Online Reporting Tools. National Institutes of Health. <https://reporter.nih.gov/>. February 19, 2025.
- Rich AL, Patel JT, Al-Angari SS. 2016. Carbon disulfide (CS₂) interference in glucose metabolism from unconventional oil and gas extraction and processing emissions. *Environ Health Insights* 10:51-57.
<https://doi.org/10.4137/ehi.S31906>.
- Rooney AA, Boyles AL, Wolfe MS, et al. 2014. Systematic review and evidence integration for literature-based environmental health science assessments. *Environ Health Perspect* 122(7):711-718.
<https://doi.org/10.1289/ehp.1307972>.
- Rosenbaum AS, Axelrad DA, Woodruff TJ, et al. 1999. National estimates of outdoor air toxics concentrations. *J Air Waste Manag Assoc* 49(10):1138-1152.
<https://doi.org/10.1080/10473289.1999.10463919>.
- Rossoff IS. 1974. Carbon disulfide. In: *Handbook of veterinary drugs: A compendium for research and clinical use*. New York, NY: Springer Publishing Company, 82.
- Roy WR, Griffin RA. 1985. Mobility of organic solvents in water-saturated soil materials. *Environ Geol Water Sci* 7(4):241-247. <https://doi.org/10.1007/BF02509925>.
- Ruby MG, Prokop WH, Kalman DA. 1987. Measurement of odor emissions from a sewage treatment plant. In: For presentation at the 8th annual meeting of APCA, New York, New York June 21-26, 1987. Vol. 87-75A.4. Air Pollution Control Association, 2-16.
- Ruijten MW, Salle HJ, Ververk MM, et al. 1990. Special nerve functions and colour discrimination in workers with long term low level exposure to carbon disulphide. *Br J Ind Med* 47(9):589-595.
<https://doi.org/10.1136/oem.47.9.589>.
- Ruijten MW, Salle HJ, Verberk MM. 1993. Verification of effects on the nervous system of low level occupational exposure to CS₂. *Br J Ind Med* 50(4):301-307. <https://doi.org/10.1136/oem.50.4.301>.
- Ruiz P, Ray M, Fisher J, et al. 2011. Development of a human Physiologically Based Pharmacokinetic (PBPK) Toolkit for environmental pollutants. *Int J Mol Sci* 12(11):7469-7480.
<https://doi.org/10.3390/ijms12117469>.
- Ruth JH. 1986. Odor thresholds and initiation levels of several chemical substances: A review. *Am Ind Hyg Assoc J* 47:A142-A151. <https://doi.org/10.1080/15298668691389595>.
- Saillenfait AM, Bonnet P, de Ceaurriz J. 1989. Effects of inhalation exposure to carbon disulfide and its combination with hydrogen sulfide on embryonal and fetal development in rats. *Toxicol Lett* 48(1):57-66. [https://doi.org/10.1016/0378-4274\(89\)90186-0](https://doi.org/10.1016/0378-4274(89)90186-0).
- Sax NI, Lewis JR. 1987. Carbon disulfide. In: *Hawley's condensed chemical dictionary*. 10th ed. New York, NY: Van Nostrand Reinhold Co., 220-221.
- Schramm A, Uter W, Brandt M, et al. 2016. Increased intima-media thickness in rayon workers after long-term exposure to carbon disulfide. *Int Arch Occup Environ Health* 89(3):513-519.
<https://doi.org/10.1007/s00420-015-1091-5>.
- Seppalainen AM, Tolonen MT. 1974. Neurotoxicity of long-term exposure to carbon disulfide in the viscose rayon industry: A neurophysiological study. *Work Environ Health* 11(3):145-153.
- Seppalainen AM, Tolonen M, Karli P, et al. 1972. Neurophysiological findings in chronic carbon disulfide poisoning. A descriptive study. *Work Environ Health* 9(2):71-75.
<https://doi.org/10.5271/sjweh.2447>.
- Sidorowicz V, Budziszewska D, Murawska T, et al. 1980. Structural disturbances in erythrocytes in workers exposed to carbon disulfide (CS₂). *Arh Hig Rada Toksikol* 31(2):125-129.
- Sills RC, Morgan DL, Harry GJ. 1998a. Carbon disulfide neurotoxicity in rats: I. Introduction and study design. *Neurotoxicology* 19(1):83-87.

8. REFERENCES

- Sills RC, Harry GJ, Morgan DL, et al. 1998b. Carbon disulfide neurotoxicity in rats: V. Morphology of axonal swelling in the muscular branch of the posterior tibial nerve and spinal cord. *Neurotoxicology* 19(1):117-127.
- Simmons JE, Sloane RA, Van Stee EW. 1988. Hepatic cholesterol metabolism as a function of carbon disulfide concentration and treatment with phenobarbital. *Am Ind Hyg Assoc J* 49(9):427-433. <https://doi.org/10.1080/15298668891380024>.
- Simmons JE, Sloane RA, Van Stee EW. 1989. Hepatic cholesterol metabolism following exposure to carbon disulfide in phenobarbital-treated rats. *Arch Environ Contam Toxicol* 18(5):678-687. <https://doi.org/10.1007/BF01225006>.
- Simon P, Nicot T, Dieudonne M. 1994. Dietary habits, a non-negligible source of 2-thiothiazolidine-4-carboxylic acid and possible overestimation of carbon disulfide exposure. *Int Arch Occup Environ Health* 66:85-90. <https://doi.org/10.1007/BF00383362>.
- Sine C. 1989. Carbon disulfide. In: *Farm chemicals handbook '89*. Willoughby, OH: Meister Publishing Co., C 60.
- Smet E, Van Langenhove H, De Bo I. 1999. The emission of volatile compounds during the aerobic and the combined anaerobic/aerobic composting of biowaste. *Atmos Environ* 33(8):1295-1303. [https://doi.org/10.1016/s1352-2310\(98\)00260-x](https://doi.org/10.1016/s1352-2310(98)00260-x).
- Smith DE, Timmerman RW. 2003. Carbon disulfide. In: *Kirk-Othmer encyclopedia of chemical technology*. Vol. 4. John Wiley & Sons, 822-842.
- Snyderwine EG, Hunter A. 1987. Metabolism and distribution of ¹⁴C- and ³⁵S-labelled carbon disulfide in immature rats of different ages. *Drug Metab Dispos* 15(3):289-294. [https://doi.org/10.1016/S0090-9556\(25\)06698-X](https://doi.org/10.1016/S0090-9556(25)06698-X).
- Snyderwine EG, Kroll R, Rubin RJ. 1988. The possible role of the ethanol-inducible isozymes of cytochrome p-450 in the metabolism and distribution of carbon disulfide. *Toxicol Appl Pharmacol* 93:11-21. [https://doi.org/10.1016/0041-008x\(88\)90021-x](https://doi.org/10.1016/0041-008x(88)90021-x).
- Song F, Zhang C, Wang Q, et al. 2009. Alterations in neurofilaments content and calpains activity of sciatic nerve of carbon disulfide-treated rats. *Arch Toxicol* 83(6):587-594. <https://doi.org/10.1007/s00204-008-0399-2>.
- Song J, Wang D, Zhou M, et al. 2023. Carbon disulfide exposure induced lung function reduction partly through oxidative protein damage: A cross-sectional and longitudinal analysis. *J Hazard Mater* 454:131464. <https://doi.org/10.1016/j.jhazmat.2023.131464>.
- Soucek B. 1957. [Changes of carbon disulfide in the organism]. *J Hyg Epidemiol Microbiol Immunol* 1:10-22. (German)
- Souza ML, DeMartino AW, Ford PC. 2017. Biological thiols and carbon disulfide: The formation and decay of trithiocarbonates under physiologically relevant conditions. *ACS Omega* 2(10):6535-6543. <https://doi.org/10.1021/acsomega.7b01206>.
- Spyker DA, Gallanosa AG, Suratt PM. 1982. Health effects of acute carbon disulfide exposure. *J Toxicol Clin Toxicol* 19(1):87-93. <https://doi.org/10.3109/15563658208990369>.
- Stackelberg PE, Kauffman LJ, Ayers MA, et al. 2001. Frequently co-occurring pesticides and volatile organic compounds in public supply and monitoring wells, southern New Jersey, USA. *Environ Toxicol Chem* 20(4):853-865. [https://doi.org/10.1897/1551-5028\(2001\)020<0853:fcopav>2.0.co;2](https://doi.org/10.1897/1551-5028(2001)020<0853:fcopav>2.0.co;2).
- Stanosz S, Kuligowski D, Pielesek A, et al. 1994a. Concentration of dopamine in plasma, activity of dopamine beta-hydroxylase in serum and urinary excretion of free catecholamines and vanillylmandelic acid in women chronically exposed to carbon disulphide. *Int J Occup Med Environ Health* 7(3):257-261.
- Stanosz S, Kuligowski D, Zuk E, et al. 1994b. The pattern of some lipid fractions in the serum of women chronically exposed to carbon disulfide. *Ind Health* 32(3):183-186. <https://doi.org/10.2486/indhealth.32.183>.
- Staubes R, Georgii HW, Ockelmann G. 1987. Emissions of biogenic sulfur compounds from various soils. In: Angeletti G, Restelli G, eds. *Physical-chemical behavior of atmospheric pollutants*. Dordrecht: Springer, 427-433. https://doi.org/10.1007/978-94-009-3841-0_47.

8. REFERENCES

- Stokinger HE, Scheel LD. 1973. Hypersusceptibility and genetic problems in occupational medicine-A consensus report. *J Occup Med* 15(7):564-573.
- Strittmatter CF, Peters T, McKee RW. 1950. Metabolism of labelled carbon disulfide in guinea pigs and mice. *Arch Ind Hyg Occup Med* 1:54-64.
- Su LJ, Young SG, Collins J, et al. 2022. Geospatial assessment of pesticide concentration in ambient air and colorectal cancer incidence in Arkansas, 2013-2017. *Int J Environ Res Public Health* 19(6):3258. <https://doi.org/10.3390/ijerph19063258>.
- Sugimoto K, Goto S, Hotta R. 1976. An epidemiological study on retinopathy due to carbon disulfide: CS₂ exposure level and development of retinopathy. *Int Arch Occup Environ Health* 37:1-8. <https://doi.org/10.1007/BF00409360>.
- Sugimoto K, Goto S, Taniguchi H, et al. 1977. Ocular fundus photography of workers exposed to carbon disulfide - A comparative epidemiological study between Japan and Finland. *Int Arch Occup Environ Health* 39:97-101. <https://doi.org/10.1007/BF00380889>.
- Sugimoto K, Goto S, Kanda S, et al. 1978. Studies on angiopathy due to carbon disulfide: Retinopathy and index of exposure dosages. *Scand J Work Environ Health* 4(2):151-158. <https://doi.org/10.5271/sjweh.2714>.
- Suh S, Kim DK. 2015. Subclinical hypothyroidism and cardiovascular disease. *Endocrinol Metab* 30(3):246-251. <https://doi.org/10.3803/EnM.2015.30.3.246>.
- Swaen GM, Braun C, Slangen JJ. 1994. Mortality of Dutch workers exposed to carbon disulfide. *Int Arch Occup Environ Health* 66(2):103-110. <https://doi.org/10.1007/BF00383365>.
- Sweeney LM, Gearhart JM. 2020. Examples of physiologically based pharmacokinetic modeling applied to risk assessment. In: Fisher JW, Gearhart JM, Lin Z, eds. *Physiologically based pharmacokinetic (PBPK) modeling*. Academic Press, 281-299. <https://doi.org/10.1016/B978-0-12-818596-4.00011-4>.
- Sweetnam PM, Taylor SW, Elwood PC. 1987. Exposure to carbon disulphide and ischaemic heart disease in a viscose rayon factory. *Br J Ind Med* 44(4):220-227. <https://doi.org/10.1136/oem.44.4.220>.
- Tabacova S, Balabaeva L. 1980. Subtle consequences of prenatal exposure to low carbon disulphide levels. *Arch Toxicol Suppl* 4:252-254. https://doi.org/10.1007/978-3-642-67729-8_51.
- Tabacova S, Hinkova L, Balabaeva L. 1978. Carbon disulphide tetratoxicity and postnatal effects in rat. *Toxicol Lett* 2(3):129-133. [https://doi.org/10.1016/0378-4274\(78\)90086-3](https://doi.org/10.1016/0378-4274(78)90086-3).
- Tabacova S, Nikiforov B, Balabaeva L. 1983. Carbon disulfide intrauterine sensitization. *J Appl Toxicol* 3(5):223-229. <https://doi.org/10.1002/jat.2550030502>.
- Takebayashi T, Omae K, Ishizuka C, et al. 1998. Cross sectional observation of the effects of carbon disulphide on the nervous system, endocrine system, and subjective symptoms in rayon manufacturing workers. *Occup Environ Med* 55(7):473-479. <https://doi.org/10.1136/oem.55.7.473>.
- Takebayashi T, Nishiwaki Y, Nomiyama T, et al. 2003. Lack of relationship between occupational exposure to carbon disulfide and endocrine dysfunction: a six-year cohort study of the Japanese rayon workers. *J Occup Health* 45(2):111-118. <https://doi.org/10.1539/joh.45.111>.
- Takebayashi T, Nishiwaki Y, Uemura T, et al. 2004. A six year follow up study of the subclinical effects of carbon disulphide exposure on the cardiovascular system. *Occup Environ Med* 61(2):127-134. <https://doi.org/10.1136/oem.2002.006858>.
- Tan X, Bi Y, Su Y, et al. 2000. Carbon disulfide at a Chinese viscose factory: external and internal exposure assessment. *J Environ Monit* 2(6):666-669. <https://doi.org/10.1039/b005810f>.
- Tan X, Peng X, Wang F, et al. 2002. Cardiovascular effects of carbon disulfide: meta-analysis of cohort studies. *Int J Hyg Environ Health* 205(6):473-477. <https://doi.org/10.1078/1438-4639-00174>.
- Tan X, Peng X, Wang Y, et al. 2003. Carbon disulfide cytotoxicity on cultured cardiac myocyte cell of rats. *Ecotoxicol Environ Saf* 55(2):168-172. [https://doi.org/10.1016/s0147-6513\(02\)00124-0](https://doi.org/10.1016/s0147-6513(02)00124-0).
- Tan YM, Chan M, Chukwudebe A, et al. 2020. PBPK model reporting template for chemical risk assessment applications. *Regul Toxicol Pharmacol* 115:104691. <https://doi.org/10.1016/j.yrtph.2020.104691>.

8. REFERENCES

- Tarkowski S, Sobczak H. 1971. Oxidation and phosphorylation processes in brain mitochondria of rats exposed to carbon disulfide. *J Neurochem* 18:177-182. <https://doi.org/10.1111/j.1471-4159.1971.tb00555.x>.
- Teisinger J, Soucek B. 1949. Absorption and elimination of carbon disulfide in man. *J Ind Hyg Toxicol* 31(2):67-73.
- Tepe SJ, Zenick H. 1984. The effects of carbon disulfide on the reproductive system of the male rat. *Toxicology* 32(1):47-56. [https://doi.org/10.1016/0300-483x\(84\)90033-7](https://doi.org/10.1016/0300-483x(84)90033-7).
- Thienpont LM, Depourcq GC, Nelis HJ, et al. 1990. Liquid chromatographic determination of 2--thioxothiazolidine-4-carboxylic acid isolated from urine by affinity chromatography on organomercurial agarose gel. *Anal Chem* 62(24):2673-2675. <https://doi.org/10.1021/ac00223a005>.
- Tiller JR, Schilling RS, Morris JM. 1968. Occupational toxic factors in mortality from coronary heart disease. *Br Med J* 4:407-411. <https://doi.org/10.1136/bmj.4.5628.407>.
- Timmerman RW. 1978. Carbon disulfide. In: Grayson M, ed. *Kirk-Othmer encyclopedia of chemical technology*. Vol. 4. 3rd ed. New York, NY: John Wiley, 743.
- Tolonen H, Hernberg S, Nurminen M, et al. 1975. A follow-up study of coronary heart disease in viscose rayon workers exposed to carbon disulfide. *Br J Ind Med* 32(1):1-10. <https://doi.org/10.1136/oem.32.1.1>.
- Tolonen M, Hernberg S, Nordman CH, et al. 1976. Angina pectoris, electrocardiographic findings and blood pressure in Finnish and Japanese workers exposed to carbon disulfide. *Int Arch Occup Environ Health* 37(4):249-264. <https://doi.org/10.1007/BF00380109>.
- Tolonen M, Nurminen M, Hernberg S. 1979. 10-Year coronary mortality of workers exposed to carbon disulfide. *Scand J Work Environ Health* 5(2):109-114. <https://doi.org/10.5271/sjweh.2662>.
- Toyama T, Kusano H. 1953. [An experimental study on absorption and excretion of carbon disulphide]. *Nihon Eiseigaku Zasshi* 8:10. (Japanese)
- Toyama T, Sakurai H. 1967. Ten years change in exposure level and toxicological manifestations of carbon disulphide workers. In: Brieger H, Teisinger J, eds. *Toxicology of carbon disulphide: Proceedings of a symposium, Prague, September 15th-17th, 1966*. Amsterdam: Excerpta Medica Foundation, 197-204.
- TRI23. 2025. Carbon disulfide. TRI search. Washington, DC: U.S. Environmental Protection Agency. <https://www.epa.gov/enviro/tri-search>. February 19, 2025.
- Tsai ML, Chang JH, Huang BM, et al. 2000. In vivo exposure to carbon disulfide increases the contraction frequency of pregnant rat uteri through an indirect pathway. *Life Sci* 66(3):201-208. [https://doi.org/10.1016/s0024-3205\(99\)00581-0](https://doi.org/10.1016/s0024-3205(99)00581-0).
- UNEP. 1985. Treatment and disposal methods for waste chemicals. IRPTC data profile series. Geneva: United Nations Environmental Programs. <https://digitallibrary.un.org/record/118466?ln=en>. May 28, 2024.
- USDA. 2025. Carbon disulfide. Dr. Duke's phytochemical and ethnobotanical databases. U.S. Department of Agriculture. <https://phytochem.nal.usda.gov/chemical-carbon-disulfide>. March 6, 2025.
- USGS. 2018a. Pesticide use maps - dazomet. Estimated annual agricultural pesticide use. U.S. Geological Survey. https://water.usgs.gov/nawqa/pnsp/usage/maps/compound_listing.php. May 28, 2024.
- USGS. 2018b. Pesticide use maps - metampotassium. Estimated annual agricultural pesticide use. U.S. Geological Survey. https://water.usgs.gov/nawqa/pnsp/usage/maps/compound_listing.php. May 28, 2024.
- USGS. 2018c. Pesticide use maps - thiram. Estimated annual agricultural pesticide use. U.S. Geological Survey. https://water.usgs.gov/nawqa/pnsp/usage/maps/compound_listing.php. May 28, 2024.
- USITC. 2024. Carbon disulfide. Dataweb. U.S. International Trade Commission. <https://dataweb.usitc.gov/>. February 24, 2025.

8. REFERENCES

- Valentine LM, Graham DG, Anthony DC. 1993. Covalent cross-linking of erythrocyte spectrin by carbon disulfide in vivo. *Toxicol Appl Pharmacol* 121:71-77. <https://doi.org/10.1006/taap.1993.1130>.
- Valentine WM, Amarnath V, Graham DG, et al. 1997. CS₂-mediated cross-linking of erythrocyte spectrin and neurofilament protein: dose response and temporal relationship to the formation of axonal swellings. *Toxicol Appl Pharmacol* 142(1):95-105. <https://doi.org/10.1006/taap.1996.8028>.
- Van Doorn R, Leijdekkers CP, Henderson PT, et al. 1981a. Determination of thio compounds in urine of workers exposed to carbon disulfide. *Arch Environ Health* 36(6):289-297. <https://doi.org/10.1080/00039896.1981.10667640>.
- Van Doorn R, Delbressine LP, Leijdekkers CM, et al. 1981b. Identification and determination of 2-thiothiazolidine-4-carboxylic acid in urine of workers exposed to carbon disulfide. *Arch Toxicol* 47(1):51-58. <https://doi.org/10.1007/BF00297130>.
- van Poucke L, van Peteghem C, Vanhoorne M. 1990. Accumulation of carbon disulphide metabolites. *Int Arch Occup Environ Health* 62(6):479-482. <https://doi.org/10.1007/BF00379067>.
- Vanhoorne M, De Bacquer D, De Backer G. 1992a. Epidemiological study of the cardiovascular and liver effects of carbon disulfide. *Int J Epidemiol* 21(4):745-752. <https://doi.org/10.1093/ije/21.4.745>.
- Vanhoorne M, De Bacquer D, Barbier F. 1992b. Epidemiological study of gastrointestinal and liver effects of carbon disulfide. *Int Arch Occup Environ Health* 63(8):517-523. <https://doi.org/10.1007/BF00386339>.
- Vanhoorne M, Vermeulen A, De Bacquer D. 1993. Epidemiological study of endocrinological effects of carbon disulfide. *Arch Environ Health* 48(5):370-375. <https://doi.org/10.1080/00039896.1993.9936730>.
- Vanhoorne M, Comhaire F, De Bacquer D. 1994. Epidemiological study of the effects of carbon disulfide on male sexuality and reproduction. *Arch Environ Health* 49(4):273-278. <https://doi.org/10.1080/00039896.1994.9937479>.
- Vanhoorne MH, Ceulemans L, De Bacquer DA, et al. 1995. An epidemiologic study of the effects of carbon disulfide on the peripheral nerves. *Int J Occup Environ Health* 1(4):295-302. <https://doi.org/10.1179/oeh.1995.1.4.295>.
- Vanhoorne M, De Rouck A, Bacquer D. 1996. Epidemiological study of the systemic ophthalmological effects of carbon disulfide. *Arch Environ Health* 51(3):181-188. <https://doi.org/10.1080/00039896.1996.9936014>.
- Vasilescu C. 1976. Sensory and motor conduction in chronic carbon disulfide poisoning. *Eur Neurol* 14(6):447-457. <https://doi.org/10.1159/000114772>.
- Venet T, Carreres-Pons M, Chalansonnet M, et al. 2017. Continuous exposure to low-frequency noise and carbon disulfide: Combined effects on hearing. *Neurotoxicology* 62:151-161. <https://doi.org/10.1016/j.neuro.2017.06.013>.
- Vermeulen R, Jönsson BA, Lindh CH, et al. 2005. Biological monitoring of carbon disulphide and phthalate exposure in the contemporary rubber industry. *Int Arch Occup Environ Health* 78(8):663-669. <https://doi.org/10.1007/s00420-005-0017-z>.
- Verschueren K. 1983. Carbon disulfide. In: *Handbook of environmental data on organic chemicals*. 2nd ed. New York, NY: Van Nostrand Reinhold Co., 340-341.
- Vertin PG. 1978. Incidence of cardiovascular diseases in the Dutch viscose rayon industry. *J Occup Med* 20(5):346-350.
- Vigliani EC. 1950. Clinical observations on carbon disulfide intoxication in Italy. *Ind Med Surg* 19(5):240-242.
- Vigliani EC. 1954. Carbon disulfide poisoning in viscose rayon factories. *Br J Ind Med* 11:235-244. <https://doi.org/10.1136/oem.11.4.235>.
- Visconti E, Vidakovic A, Cavalleri A, et al. 1967. Fibrinolytic activity in young workers exposed to carbon disulphide. In: Brieger H, Teisinger J, eds. *Toxicology of carbon disulphide: Proceedings of*

8. REFERENCES

- a symposium, Prague, September 15th-17th, 1966. Amsterdam: Excerpta Medica Foundation, 128-132.
- Vogt WG, Walsh JJ. 1985. Volatile organic compounds in gases from landfill simulators. In: For presentation at the 78th annual meeting of the Air Pollution Control Association, Detroit Michigan June 16-21, 1985. Vol. 85-73.5. Air Pollution Control Association, 2-17.
- Wägar G, Tolonen M, Stenman UH, et al. 1981. Endocrinologic studies in men exposed occupationally to carbon disulfide. *J Toxicol Environ Health* 7(3-4):363-371. <https://doi.org/10.1080/15287398109529987>.
- Wägar G, Tolonen M, Tanner P, et al. 1983. Serum gonadotropins and testosterone in men occupationally exposed to carbon disulfide. *J Toxicol Environ Health A* 11(4-6):691-701. <https://doi.org/10.1080/15287398309530377>.
- Wang S, Chen Y, Kou R, et al. 2016. Carbon disulfide activates p62-Nrf2-keap1 pathway in rat nerve tissues. *Toxicology* 368-369:19-27. <https://doi.org/10.1016/j.tox.2016.08.013>.
- Wang S, Irving G, Jiang L, et al. 2017. Oxidative stress mediated hippocampal neuron apoptosis participated in carbon disulfide-induced rats cognitive dysfunction. *Neurochem Res* 42(2):583-594. <https://doi.org/10.1007/s11064-016-2113-8>.
- Wang J, Chu YX, Tian G, et al. 2023. Estimation of sulfur fate and contribution to VSC emissions from lakes during algae decay. *Sci Total Environ* 856(Pt 2):159193. <https://doi.org/10.1016/j.scitotenv.2022.159193>.
- Weast RC. 1989. Carbon disulfide. In: *CRC Handbook of chemistry and physics*. 70th ed. Boca Raton, FL: CRC Press, B-82.
- Weisel CP, Alimokhtari S, Sanders PF. 2008. Indoor air VOC concentrations in suburban and rural New Jersey. *Environ Sci Technol* 42(22):8231-8238. <https://doi.org/10.1021/es8005223>.
- WHO. 1979. Carbon disulfide. Environmental health criteria. Geneva, Switzerland: World Health Organization. EHC 10. <https://wedocs.unep.org/handle/20.500.11822/29277>. July 27, 2023.
- WHO. 1981. Recommended health-based limits in occupational exposure to selected organic solvents. Geneva, Switzerland: World Health Organization. WHO TRS 664. <https://apps.who.int/iris/handle/10665/41512>. July 27, 2023.
- WHO. 2000. Summary of the guidelines. Air quality guidelines for Europe, 2nd edition. Copenhagen, Denmark: World Health Organization. 32-40. WHO regional publications European series 91. <https://apps.who.int/iris/handle/10665/107335>. May 27, 2023.
- WHO. 2002. Carbon disulfide. Concise international chemical assessment document. Geneva: World Health Organization. CICAD 46. <https://apps.who.int/iris/bitstream/handle/10665/42554/9241530464.pdf>. July 25, 2023.
- WHO. 2021. WHO laboratory manual for the examination and processing of human semen. World Health Organization. <https://iris.who.int/bitstream/handle/10665/343208/9789240030787-eng.pdf?sequence=1>. June 22, 2022.
- WHO. 2022. Guidelines for drinking-water quality. Fourth edition incorporating the first and second addenda. World Health Organization. <https://www.who.int/publications/i/item/9789240045064>. June 22, 2022.
- Wilcosky TC, Tyroler HA. 1983. Mortality from heart disease among workers exposed to solvents. *J Occup Med* 25(12):879-885. <https://doi.org/10.1097/00043764-198312000-00010>.
- Wilcosky TC, Checkoway H, Marshall EG, et al. 1984. Cancer mortality and solvent exposures in the rubber industry. *Am Ind Hyg Assoc J* 45(12):809-811. <https://doi.org/10.1080/15298668491400683>.
- Wilmarth KR, Viana ME, Abou-Donia MB. 1993. Carbon disulfide inhalation increases Ca²⁺/calmodulin-dependent kinase phosphorylation of cytoskeletal proteins in the rat central nervous system. *Brain Research* 628:293-300. [https://doi.org/10.1016/0006-8993\(93\)90967-R](https://doi.org/10.1016/0006-8993(93)90967-R).
- Windholz M. 1983. Carbon disulfide. In: *The Merck index*. 10th ed. Rahway, NJ: Merck and Co., Inc, 316.

8. REFERENCES

- Wine PH, Chameides WL, Ravishankara AR. 1981. Potential role of carbon disulfide photooxidation in tropospheric sulfur chemistry. *Geophys Res Lett* 8(5):543-546.
<https://doi.org/10.1029/GL008i005p00543>.
- Wood WP, Heicklen J. 1971. The photooxidation of carbon disulfide. *J Phys Chem* 75(7):854-860.
<https://doi.org/10.1021/j100677a002>.
- Worthing CR. 1987. Carbon disulphide. In: *The pesticide manual: A world compendium*. 8th ed. Suffolk, Great Britain: The Lavenham Press Ltd, 2030.
- WQP. 2025. Carbon disulfide. Water quality portal. Environmental Protection Agency (EPA); National Water Quality Monitoring Council (NWQMC); United States Geological Survey (USGS).
<https://www.waterqualitydata.us/portal/>. March 12, 2025.
- Wrońska-Nofer T. 1972. The influence of low doses of nicotinic acid upon the development of lipid disturbances in rats chronically exposed to carbon disulphide. *Int Arch Arbeitsmed* 29:285-290.
<https://doi.org/10.1007/BF00539443>.
- Wrońska-Nofer T. 1973. Disturbances of lipids metabolism in rats in dependence upon carbon disulfide concentrations in the air. *Med Lav* 64(1-2):8-12.
- Wrońska-Nofer T, Szendzikowski S, Obrebska-Parke M. 1980. Influence of chronic carbon disulfide intoxication on the development of experimental atherosclerosis in rats. *Br J Ind Med* 37:387-393.
<https://doi.org/10.1136/oem.37.4.387>.
- Wrońska-Nofer T, Klimczak J, Wisniewska-Knypl JM, et al. 1986. Combined effect of ethanol and carbon disulfide on cytochrome P450 monooxygenase, lipid peroxidation and ultrastructure of the liver in chronically exposed rats. *J Appl Toxicol* 6(4):297-302.
<https://doi.org/10.1002/jat.2550060412>.
- Wrońska-Nofer T, Chojnowska-Jezierska J, Nofer JR, et al. 2002. Increased oxidative stress in subjects exposed to carbon disulfide (CS₂)-an occupational coronary risk factor. *Arch Toxicol* 76(3):152-157. <https://doi.org/10.1007/s00204-001-0311-9>.
- Xu T, Wang B, Wang X, et al. 2021. Associations of urinary carbon disulfide metabolite with oxidative stress, plasma glucose and risk of diabetes among urban adults in China. *Environ Pollut* 272:115959. <https://doi.org/10.1016/j.envpol.2020.115959>.
- Xu F, Zhang HH, Yan SB, et al. 2023. Biogeochemical controls on climatically active gases and atmospheric sulfate aerosols in the western Pacific. *Environ Res* 220:115211.
<https://doi.org/10.1016/j.envres.2023.115211>.
- Xu F, Zhang HH, Zhong XS, et al. 2024a. Rapid cycling and emission of volatile sulfur compounds in the eastern Indian Ocean: Impact of runoff inputs and implications for balancing atmospheric carbonyl sulfide budget. *Water Res* 267:122475. <https://doi.org/10.1016/j.watres.2024.122475>.
- Xu F, Zhang HH, Zhong XS, et al. 2024b. Revealing the marine cycles of volatile sulfur compounds and their biogeochemical controls: A case of the western North Pacific. *Environ Sci Technol* 58(7):3235-3245. <https://doi.org/10.1021/acs.est.3c07498>.
- Yan Y, Wang C, Zheng Z, et al. 2019. Renal injury following long-term exposure to carbon disulfide: analysis of a case series. *BMC Nephrol* 20(1):377. <https://doi.org/10.1186/s12882-019-1553-1>.
- Yang L, Zhang B, Yuan Y, et al. 2014. Oxidative stress and DNA damage in utero and embryo implantation of mice exposed to carbon disulfide at peri-implantation. *Hum Exp Toxicol* 33(4):424-434. <https://doi.org/10.1177/0960327112474849>.
- Yoshioka N, Takebayashi T, Nishiwaki Y, et al. 2017. Changes of median nerve conduction velocity in rayon manufacturing workers: A 6-year cohort study. *J Occup Health* 59(2):187-193.
<https://doi.org/10.1539/joh.16-0255-OA>.
- Zenick H, Blackburn K, Jope E, et al. 1984. An evaluation of the copulatory, endocrinologic, and spermatotoxic effects of carbon disulfide in the rat. *Toxicol Appl Pharmacol* 73:275-283.
[https://doi.org/10.1016/0041-008X\(84\)90333-8](https://doi.org/10.1016/0041-008X(84)90333-8).
- Zhang B, Shen C, Yang L, et al. 2013. DNA damage and apoptosis of endometrial cells cause loss of the early embryo in mice exposed to carbon disulfide. *Toxicol Appl Pharmacol* 273(2):381-389.
<https://doi.org/10.1016/j.taap.2013.09.013>.

8. REFERENCES

- Zhou SY, Liang YX, Chen ZQ, et al. 1988. Effects of occupational exposure to low-level carbon disulfide (CS₂) on menstruation and pregnancy. *Ind Health* 26(4):203-214. <https://doi.org/10.2486/indhealth.26.203>.
- Zhu J, Newhook R, Marro L, et al. 2005. Selected volatile organic compounds in residential air in the city of Ottawa, Canada. *Environ Sci Technol* 39(11):3964-3971. <https://doi.org/10.1021/es050173u>.
- Zumkehr A, Hilton TW, Whelan M, et al. 2017. Gridded anthropogenic emissions inventory and atmospheric transport of carbonyl sulfide in the U.S. *J Geophys Res Atmos* 122(4):2169-2178. <https://doi.org/10.1002/2016jd025550>.