

Health effects of tobacco toxins

Now let's look at the health effects of particular chemicals found in tobacco smoke that you may also be exposed to at your workplace.

Usually, more serious exposure causes more severe symptoms.

Acetaldehyde	Used in glues and resins; suspected carcinogen; may increase the absorption of other hazardous chemicals into the bronchial tubes.
Acetone	Used in solvents; irritating to the throat, nose, and eyes; long-term exposure can cause liver and kidney damage.
Acrolein	Used in polyester resins and herbicides; an ingredient in tear gas and other chemical warfare agents; extremely toxic; intensely irritating of the upper respiratory tract and eyes.
Acrylonitrile	Used in synthetic resins, plastics and rubber, and as a fumigant; also known as "vinyl cyanide"; suspected human carcinogen.
1-aminonaphthalene	Used in weed control; causes cancer.
2-aminonphthalene	Banned in industrial uses; causes bladder cancer.
Ammonia	Used in cleaners; causes asthma and elevated blood pressure.
Arsenic	Found in pesticides; causes diarrhea, cramps, anemia, paralysis, and malignant skin tumors.
Benzene	Used in solvents, pesticides and gasolines; causes leukemia and other cancers.
Benzo[a]pyrene	Found in coal tar pitch, creosote, and some asphalts; causes skin cancer, lung cancer and reduction in reproductive capability.
1,3 Butadiene	Used in rubber, latex, and neoprene products; suspected carcinogen.
Butyraldehyde	Used in solvents and resins; powerful inhalation irritant; affects the lining of nose and lungs.
Cadium	Used in non-corrosive metal coatings, bearings, pigments and storage batteries; causes cancer, damages kidneys, liver, and brain.
Carbon Monoxide	Produced by burning (in gasoline engines, welding, gas-powered tools, etc.); decreases heart and muscle function; causes fatigue, dizziness, weakness; especially toxic for the unborn, infants and people with lung or heart disease.
Catechol	Used as an antioxidant in dyes, inks and oils; causes high blood pressure, upper respiratory tract irritation, and dermatitis.
Chromium	Used in metal plating and alloys, wood treatment and preservatives, and pigments; causes lung cancer; stainless steel welding involves the greatest exposure.

Cresol	Used in solvents, disinfectants, and wood preservatives; highly irritating to the skin; acute inhalation levels cause upper respiratory, nasal, and throat irritation.
Crotonaldehyde	Used as a warning agent in fuel gases; causes chromosome aberrations; reported to interfere with immune function.
Formaldehyde	Part of resin used in particleboard, fiberboard, and plywood, also used in foam insulation, causes nasal cancer; can damage your lungs, skin, and digestive system.
Hydrogen Cyanide	Used in making fibers, resins, plastics, dyes, and pesticides and as a fumigant; released in metal treatment operations, electroplating metals, metal ore processing, and developing film; has been used in some gas chamber executions; weakens lungs; breathing small amounts causes nausea, headaches, fatigue, and vomiting; larger amounts may cause gasping, irregular heartbeat, seizures, fainting, and rapid death.
Hydroquinone	Used in paints, varnishes and motor fuel; cause eye injuries, skin irritation, and central nervous system effects.
Isoprene	Used in rubber; similar to 1,3-butadiene; causes irritation to the skin, eyes, and mucous membranes.
Lead	Used in paint and metal alloys (solder, brass, bronze); damages your brain, nerves, kidneys, and reproductive system; causes anemia and stomach problems; may cause cancer; particularly toxic to children.
Methyl Ethyl Ketone (KEK)	Used in solvents; irritating to nose, throat, and eyes; depresses the central nervous system.
Nickel	Used in stainless steel, other metal alloys and alkaline batteries; causes upper respiratory irritation, bronchial asthma, and cancer.
Nicotine	Used as a highly controlled insecticide; exposure can result in seizures, vomiting, depression of the central nervous system, growth retardation, developmental toxicity in fetuses; mild nicotine poisoning results in diarrhea, increase in heart rate and blood pressure, headache, dizziness, and neurological stimulation.
Nitric Oxide	Created by combustion of gasoline; major contributor to smog and acid rain; linked to Huntington's disease, Alzheimer's disease, Parkinson's disease, and asthma.
NNN, NNK, and NAT	These compounds are found only in tobacco, NNN causes cancer and may cause reproductive damage; NNK is a powerful lung carcinogen; NAT is a possible carcinogen.
Phenol	Used in resins in plywood and other construction materials and in epoxy resins; highly toxic; affects the liver, kidney, respiratory, cardiovascular, and central nervous system.

Propionaldehyde	Used as a disinfectant; causes irritation of the skin, eyes, and respiratory system.
Pyridine	Used in solvents; causes eye and upper respiratory tract irritation; causes nausea, headaches, and nervousness; may cause liver damage.
Quinoline	Used as corrosion inhibitor and as solvent for resins; causes genetic mutations; possible human carcinogen; severe eye irritant; linked to liver damage.
Resorcinol	Used in laminates, resins, and adhesives; irritating to skin and eyes.
Styrene	Used in insulation, fiberglass, pipes, and plastic; possible human carcinogen; may cause leukemia; causes headaches, eye irritation, slowed reaction time, fatigue, and dizziness.
Toluene	Used in solvents, oils, and resins; highly toxic; causes fatigue, confusion, weakness, memory loss, nausea, loss of appetite, and drunken-type actions; linked to permanent brain damage.
Zinc	Found in brass and filler metals used in brazing and soldering, as well as coatings and primers. Initially causes flu-like illness called “galvanizing poisoning” or “metal fume fever” causing coughing, shortness of breath, sore throat, fever, and funny nose; swallowing zinc dust can cause nausea, vomiting, and diarrhea. ¹⁰

¹⁰ Adapted with permission from Project BUILT: www.built.org