

EnviroChem and Cancer Database (EDDC) Chemicals Found to Cause Mammary Tumors in Laboratory Animals by the National Toxicology Program

| Chemical Name (CAS #) | What is / was chemical's major use? | Cancer Classification DHHS / NTP RoC (NTP TR #) | Cancer Classification (IARC) | Is chemical currently produced / used in the U.S.? | If not currently in use, when was it taken off the market? (date) | Was chemical used in manufacturing? | Which consumer products is / was chemical found in? | Location of most prominent exposure? O = occupations H = households GP = general population | Are there any OSHA regulations / advisories? |
|--|---|--|---|--|--|--|--|--|---|
| Benzene (71-43-2) | Chemical solvent | Known human carcinogen (DHHS) | Group 1: Carcinogenic to humans | Yes | - | An intermediate used in the synthesis of many chemicals including cyclohexane, phenol and nitrobenzene. | Found in products such as commercial gasoline, rubbers, plastics, vinyls, resins, degreasers and paint tints. Household products include: <i>Champion Spray on Flush-Off Degreaser</i> , and certain <i>Glidden</i> interior paint tint bases (see NLM Household Products Database, at < http://householdproducts.nlm.nih.gov/ingredients.htm >). | O: Lab technicians. H: Those using household products such as degreasers and paints containing benzene and those pumping gasoline. | Yes, they recommend use of personal protection equipment (PPE). They have set a permissible exposure limit. Benzene is listed as a chemical hazard in labs, and is included in the Hazard Communication Standard. |
| 1,1-Dichloroethane (75-34-3) | Chemical solvent | Evidence of mammary (breast) tumors in lab animals (NTP TR #66) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes | - | Used in production of various copolymers (links two or more small molecules in a chain). | Not Applicable | O: Lab technicians | Yes, they declared a permissible exposure limit. |
| 1,2-Dichloropropane (78-87-5) | Chemical solvent | Evidence of mammary (breast) tumors in lab animals (NTP TR #263) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes | - | Used as an industrial solvent, a chemical intermediate, and in the production of carbon tetrachloride. | Found in industrial products such as furniture finishes, dry cleaning fluids and paint removers. | O: Lab technicians. GP: Presence detected in ambient air and water. | Yes, they declared a permissible exposure limit. |
| Ethylene oxide (75-21-8) | Chemical solvent | Known human carcinogen (DHHS) | Group 1: Carcinogenic to humans | Yes | - | Not Applicable | Household uses - Chemical is currently an ingredient in <i>Loctite Extend Rust Neutralizer</i> and <i>Gardner Asphalt/Concrete Driveway Cleaner</i> (see NLM Household Products Database, at < http://householdproducts.nlm.nih.gov/ingredients.htm >) | O: Workers manufacturing the product. H: Those using rust neutralizers and driveway cleaning products containing ethylene oxide. | Yes, they declared a permissible exposure limit, require use of personal protection equipment (respirators), posted it as a chemical hazard in labs and included in the Hazard Communication Standard. |
| Methylene chloride (Dichloromethane) (75-09-2) | Chemical solvent | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Not Applicable | Found in automotive degreasing and part cleaning products, paint strippers, and in adhesive and spray paint removing products. [see NLM Household Products Database, at < http://householdproducts.nlm.nih.gov/ingredients.htm > for a full listing of over 20 household products that contain methylene chloride] | O, H, GP: Anyone working with these products. | Yes, they declare a permissible exposure limit. Also, CPSC requires labeling and wearing a mask when working with these products. |
| Nitromethane (75-52-5) | Chemical solvent | Evidence of mammary (breast) tumors in lab animals (NTP TR #461) | Group 2B: Possibly carcinogenic to humans | Yes | - | Used as a solvent for various polymers and resins. | Used in rocket and engine fuels and as an explosive in mining. | O: Lab workers, miners and space scientists. GP: Found in air, surface and drinking water, and cigarette smoke. Potential for widespread human exposure. | Yes, they declared a permissible exposure limit. |
| 1,2,3-Trichloropropane (TCP) (96-18-4) | Chemical solvent | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | Yes | - | Current: Used as a chemical intermediate in production of polysulfone liquid which can be found in a variety of plastic products. Past: Used in paint and varnish removers, as a cleaning and degreasing agent, and as a soil fumigant. | Current: Polysulfone liquid is widely used in manufacturing many products including baby bottles, power tools, vacuum cleaners, microwave cookware, fishing rods and institutional food service trays. Past: Used in paint and varnish removers, as a cleaning and degreasing agent, and as a soil fumigant. | O: Lab workers exposed during use of TCP products, but not during production because it is manufactured in a closed system. GP: Possible contamination of drinking water. | Yes, they declared a permissible exposure limit, and it is listed in the Hazard Communication Standard. |
| C.I. Acid red 114 (6495-94-5) | Dye manufacturing | Evidence of mammary (breast) tumors in lab animals (NTP TR #405) | Group 2B: Possibly carcinogenic to humans | Yes | - | Used in the manufacturing of dyes. | Used to color textile fibers (wool, silk, jute) and leather. Consumer products include textiles, clothing, carpet, shoes and handbags. | O: Workers in textile, leather and shoe manufacturing industries. | None located. |
| C.I. Basic red 9 (569-61-9) | Dye manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | Not for personal use, but still used in industry | Used in the manufacturing of dyes. | Used as a dye for textiles, leather and paper, and as a biological stain. | O: Factory workers and lab personnel. | None located |
| 2,4-Diaminotoluene (95-80-7) | Dye manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | Not for commercial use (1971), still used in industry | Used in the manufacturing of dyes. | Current: Used as a dye for textiles, leather, furs, and wood. Past: Used as a hair dye until it was banned in 1971. | O: Factory workers in these industries. H: Trace amounts may appear in some clothing. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |

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|--|-------------------------------------|--|---|--|---|---|---|--|---|
| 3,3'-Dimethylbenzidine dihydrochloride (612-82-8) | Dye intermediate | Evidence of mammary (breast) tumors in lab animals (NTP TR #390) | Not listed | Yes | - | A chemical intermediate made during benzidine dye production. | Involved in the production of many benzidine based dyes. | O: Dye makers, repackaging personnel, and lab workers. H, GP: Small exposure in air, water and soil. | None located |
| 3,3'-Dimethoxybenzidine dihydrochloride (20325-40-0) | Dye intermediate | Evidence of mammary (breast) tumors in lab animals (NTP TR #372) | Not listed | Yes, but voluntarily decreased by industry | - | A chemical intermediate made during benzidine dye production. | Involved in the production of many benzidine based dyes. | O: Workers in dye manufacturing. H, GP: Trace contaminants found in final products. | None located |
| 2,4-Dinitrotoluene (121-14-2) | Dye manufacturing | Evidence of mammary (breast) tumors in lab animals (NTP TR #54) | Group 2B: Possibly carcinogenic to humans | Yes | - | A chemical intermediate used in the production of azo dyes. | Involved in the production of azo-based dyes. | O: Workers in dye manufacturing. GP: People that live near factories; trace amounts found in water supplies. | None located. |
| Hydrazobenzene (122-66-7) | Dye manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Not listed | Yes | - | Chemical is a precursor to the dye intermediate benzidine. | Benzidine is used in producing dyes used on cloth, paper and leather. | O: Dye makers. GP: People that live near dye factories as trace amounts are found in water supplies. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| o-Nitrotoluene (88-72-2) | Dye manufacturing | Evidence of mammary (breast) tumors in lab animals (NTP TR #504) | Group 3: not classifiable as to its carcinogenicity to humans | Yes | - | Used to synthesize azo and sulfur dyes. | These dyes are used on cotton, wool, silk, leather and paper. | O, H: Possible exposure during both production and use. GP: Trace amounts found in surface groundwater. | None located. |
| o-Toluidine hydrochloride (636-21-5) | Dye manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | No | 1975 | Chemical was used as an intermediate in manufacturing of more than 90 dyes and pigments. | Chemical was found in dyes used on cotton, wool, silk, leather and paper. | O: Dye and pigment makers in the past. GP: Possible exposure through ambient air (via factory emission), tobacco smoke (used in coloring), or food (artificial coloring). | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Benzene (71-43-2) | Rubber manufacturing | Known human carcinogen (DHHS) | Group 1: Carcinogenic to humans | Yes | - | Used in manufacturing of rubber, plastics, vinyl and resins. | Found in products such as commercial gasoline, rubbers, plastics, vinyl and resins. | O: Workers in rubber, plastics and resin factories. | Yes, they recommend use of personal protection equipment (PPE). They have set a permissible exposure limit. Benzene is listed as a chemical hazard in labs, and is included in the Hazard Communication Standard. |
| 1,3-Butadiene (106-99-0) | Rubber manufacturing | Known human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | Yes | - | Used as a chemical intermediate in production of synthetic rubber. | Found in rubber tires. | O: Factory workers, auto mechanics, and distributors in the auto industry. GP: General air pollution near production factories. Also detected in cigarette smoke. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| Chloroprene (126-99-8) | Neoprene manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Used in the production of polychloroprene (neoprene). | Polychloroprene is a rubber used in car parts, adhesives, caulks, sealants and mechanical goods. | O: Workers manufacturing polychloroprene and auto repair personnel. GP: Air pollution near production factories. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| 2,4-Diaminotoluene (95-80-7) | Polyethylene manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Involved in polyethylene and polyamide manufacturing. Used in automotive lubricants (grease). | Polyethylene is found in impact resins (designed for toughness and used for packaging, toys and furniture); polyamides (nitrogen containing compounds) used as a superior wire coating; and found in leakage from silicon breast implants. 2,4-dinitrotoluene is found in certain automotive greases. | O: Workers at polyethylene production facilities. Automotive repair workers who use grease containing 2,4-diaminotoluene. GP: Compound is a degradation product of the polyurethane foam used in Meme silicon breast implants (annotated 1998). | Yes, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| 1,2-Dichloroethane (107-06-2) | Vinyl chloride manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Used to synthesize polyvinyl chloride (PVC). | PVC is used to make a variety of plastic products, including pipes, wire and cable coatings, and the upholstered seats found in automobiles. | O: Workers employed in the production of vinyl chloride. H: Inhalation of contaminated air and ingestion of contaminated water near heavily industrial areas. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |

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| Glycidol (56-52-5) | Vinyl manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | Yes | - | Used as a stabilizer in manufacturing of vinyl polymers. | Used in a variety of vinyl-based products. | O: Workers manufacturing vinyl. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| o-Nitrotoluene (88-72-2) | Rubber manufacturing | Evidence of mammary (breast) tumors in lab animals (NTP TR #504) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes | - | Used to synthesize agricultural and rubber chemicals. | Found in products made of rubber (e.g. tires). Found in agricultural products (e.g. pesticides and fumigants). | O, GP: Use caution during both production and use. GP: Trace amounts found in surface groundwater and near plants. | Yes, they declared an air exposure limit. |
| 2,4,2,6-Toluene diisocyanate (26471-62-5) | Polyethylene foam manufacturing | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Used to synthesize polyethylene and polyurethane foams. | Polyethylene foams are used for packaging. Polyurethane foams are found in flexible furniture and bedding, as insulation, in household refrigerators and for commercial roofing. | O: Manufacturers in all phases must wear respirators. H: Potential for household exposure via direct contact or extensive inhalation of mentioned products. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Ethylene oxide (75-21-8) | Chemical intermediate | Known human carcinogen (DHHS) | Group 1: Carcinogenic to humans | Yes | - | Used in production of several industrial chemicals, most notably ethylene glycol. | Ethylene glycol is found in anti-freeze used in vehicle engines. | O: Workers involved with ethylene oxide production must wear respirators. GP: Exposure via ambient air near production factories. | Yes, they declared a permissible exposure limit, require use of personal protection equipment (respirators), posted it as a chemical hazard in labs and included in the Hazard Communication Standard. |
| Isoprene (78-79-5) | Chemical intermediate | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Isoprene is a natural emission from plants, trees, wood burning stoves and indoor tobacco smoke at low concentrations. Isoprene is used to produce the chemical cis-1,4-polyisoprene. | Cis-1,4-polyisoprene is an elastomer. (Elastomers when stretched reforms their original shape, like rubber bands.) | O: Workers involved with manufacturing isoprene products like polyisoprenes. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| 2,2-bis(Bromomethyl)-1,3-propanediol (3296-90-0) | Flame retardant | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | - | Used as a chemical intermediate for pentaerythritol ethers and other derivatives used as flame retardants. | Chemical is used as flame retardant in unsaturated polyester resins, in molded products and in rigid polyurethane foam. | O: Workers employed in industries where it is used. GP: It is found in the environment in dust and wastewater where it can remain for a long time. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| 2,3-Dibromo-1-propanol (96-13-9) | Flame retardant | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | No | 1977 | Was used as an intermediate in the production of tris(2,3-dibromopropyl)phosphate "Tris-BP." | "Tris-BP" is a flame retardant used in children's clothing. Banned by Consumer Products Safety Commission in 1977. | O: Workers where chemical was produced. H, GP: Over 50 million children who wore treated clothing may have been exposed. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Methyl Eugenol (93-15-2) | Food additive | Reasonably anticipated to be a human carcinogen (DHHS) | Not listed | Yes | - | Chemical is a naturally occurring substance in certain fruits. | The chemical adds flavoring. It is used in jellies, baked goods, candy, gum pudding, relish and ice-cream. | GP: Exposure can occur through ingestion of these food stuffs. Food and Drug Administration allows its use as a synthetic flavoring substance (2002). | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Clonitralid (1420-04-8) | Fumigants and pesticides | Evidence of mammary (breast) tumors in lab animals (NTP TR #91) | Not listed | Yes | - | Not Applicable | Chemical is a molluscicide used to control water snails. | O: Pesticide workers who mix or apply the chemical. GP: Areas where pesticide is being used as in the Great Lakes and Finger Lakes regions. | None located. |
| 1,2-Dibromoethane (Ethylene dibromide) (106-93-4) | Fumigants and pesticides | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | No | 1987 by EPA | Chemical is a pesticide and an ingredient in soil and grain fumigants. | Used in post-harvest application to a variety of vegetable, fruit and grain crops and also as an insecticide on golf courses. | O: Pesticide workers who mixed or applied the chemical. GP: Exposure due to ingestion of contaminated drinking water near areas where chemical was used. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| 1,2-Dibromo-3-chloropropane (DBCP) (96-12-8) | Fumigants and pesticides | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | No | 1985 by EPA | Not Applicable | Soil fumigant used to control nematodes (a type of worm) in the soil to protect field crops, vegetables, fruits, nuts, turf and nursery crops. Was extensively used on soy beans. | O: Pesticide workers who mixed or applied the chemical. GP: Activated charcoal filters can be used to remove DBCP from drinking water. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |

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| 1,2-Dichloroethane (107-06-2) | Fumigants and pesticides | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Yes | Note: not registered for use in New York State | Not Applicable | Insect fumigant and soil fumigant used in peach and apple orchards. | O: Pesticide workers who mix or apply the chemical. GP: Presence detected in ambient air and water. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| 1,2-Dichloropropane (78-87-5) | Fumigants and pesticides | Evidence of mammary (breast) tumors in lab animals (NTP TR #263) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes | Note: not registered for use in New York State | Not Applicable | Soil and grain fumigant used to control peach tree borers. | O: Fumigant workers who mix and apply the chemical. GP: Presence detected in ambient air and water. | Yes, they declared a permissible exposure limit. |
| Dichlorvos (62-73-7) | Fumigants and pesticides | Evidence of mammary (breast) tumors in lab animals (NTP TR #342) | Group 2B: Possibly carcinogenic to humans | Yes, but use restricted by EPA | - | Not Applicable | Widely used as an insecticide since 1961 to control internal and external parasites in livestock and domestic animals. Also used to control insects inside homes and on crops. It is currently being phased out. | O: Pesticide workers who mix or apply the chemical. H, GP: Dichlorvos has been found in such household products as foggers, fumigants, aerosols, flea collars or plastic pest strips. | Yes, they have declared a permissible exposure limit. |
| Sulfallate (95-06-7) | Fumigants and pesticides | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | No | Voluntarily phased out by manufacturers in the early 1990s | Not Applicable | An herbicide (weed killer) used to control grasses and broadleaf weeds around vegetable and fruit crops. Also controls weeds around shrubbery and ornamental plants. | O: Pesticide workers who mixed or applied the chemical. GP: Potential for exposure very low in U.S. because it is no longer used here. In past exposure through ingestion of residues in food crops. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Benzene (71-43-2) | Gas additive | Known human carcinogen (DHHS) | Group 1: Carcinogenic to humans | Yes, but reduced in the U.S. | - | Not Applicable | Found in products such as commercial gasoline, rubbers, plastics, vinyl and resins. | O: Gas station workers, road workers (especially in heavy traffic) and car mechanics. GP: Consumers who pump their own gas. | Yes, they recommend use of personal protection equipment (PPE). They have set a permissible exposure limit. Benzene is listed as a chemical hazard in labs, and is included in the Hazard Communication Standard. |
| 1,2-Dibromoethane (Ethylene dibromide) (106-93-4) | Gas additive | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | No | 1992 by EPA | Not Applicable | A lead scavenger used in antiknock mixture added to gasolines. Found in auto engines. | O: Gas station workers. GP: Consumers who pump their own gas. It was found in contaminated water and air. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| 1,2-Dichloroethane (107-06-2) | Gas additive | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | No | No longer used for this purpose, but date not available | Not Applicable | Used as a lead scavenger in antiknock mixture added to gasoline. | O: Automotive dealership, service station and repair shop workers in the past. GP: Potential exposure via inhalation of contaminated air and ingestion of contaminated drinking water. | Yes, they declared a permissible exposure limit, it is listed in the Hazard Communication Standard and is posted as a chemical hazard in labs. |
| Indium Phosphide (22398-80-7) | Microelectronics | Evidence of mammary (breast) tumors in lab animals (NTP TR #499) | Not listed | Yes | - | Not Applicable | Used in semiconductors, injection lasers, solar cells, photodiodes and light emitting diodes. | O: Microelectronic industry workers. | None located. |
| Ochratoxin A (303-47-9) | Mycotoxin | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2B: Possibly carcinogenic to humans | Naturally produced mycotoxin | - | Not Applicable | Ochratoxin A (OTA) is naturally occurring mycotoxin produced by certain fungi (<i>Aspergillus</i> and <i>Penicillium</i>). OTA is most often found in stored grains, and to a lesser extent in dried fruit, coffee beans and wine. | O: Potential exposure from handling contaminated foods. H, GP: Those ingesting certain molded foods containing OTA. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |

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| Acronycine (7008-42-6) | Pharmaceutical drug | Evidence of mammary (breast) tumors in lab animals (NTP TR #49) | Not listed | No | Not marketed | Not Applicable | Used as an experimental anti-cancer drug. | O: Pharmaceutical manufacturing workers. GP: Those who are prescribed the drug. | None located. |
| Cytembena (21739-91-3) | Pharmaceutical drug | Evidence of mammary (breast) tumors in lab animals (NTP TR #207) | Not listed | No | Date not available | Not Applicable | Used as a cytostatic drug in cancer treatment. Cytostatic drugs, commonly used to treat breast cancer, prevent cancerous cells from multiplying as opposed to cytotoxic drugs that kill cancerous cells. | O: Pharmaceutical manufacturing workers. GP: Those who were prescribed the drug. | None located. |
| Furosemide (54-31-9) | Pharmaceutical drug | Evidence of mammary (breast) tumors in lab animals (NTP TR #356) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes | - | Furosemide is both the active ingredient and generic name of the drug. | Used in human and veterinary medicine as a diuretic. In humans, is prescribed to patients with edema or hypertension. Known as a "loop diuretic" or "water pill." Brand names include: Lasix and Furosemide. | O: Pharmaceutical manufacturing workers. GP: Those who are prescribed the drug. | None located. |
| Hydrazobenzene (122-66-7) | Pharmaceutical drug | Reasonably anticipated to be a human carcinogen (DHHS) | Not listed | Yes | - | Used as an intermediate in manufacturing of drugs such as sulfapyrazone and phenylbutazone. | Sulfapyrazone and phenylbutazone are both used as anti-arthritis drugs. | This chemical is an intermediary, therefore not found in the end product. O: Lab workers at pharmaceutical companies manufacturing this drug. GP: Low levels of contaminant found in water near drug plants. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Isophosphamide (3778-73-2) | Pharmaceutical drug | Evidence of mammary (breast) tumors in lab animals (NTP TR #32) | Group 3: Not classifiable as to its carcinogenicity to humans | No | Date not available | Not Applicable | Used as an anti-cancer drug increasingly since 1970. It is an antineoplastic (cell killing) and an immunosuppressive drug which makes organ/blood transplants possible by preventing the natural reactions of the body to kill foreign agents. | O: Pharmaceutical manufacturing workers. GP: Those who were prescribed the drug. | None located. |
| Nitrofurazone (59-87-0) | Pharmaceutical drug | Evidence of mammary (breast) tumors in lab animals (NTP TR #337) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes | - | Not Applicable | An anti-bacterial agent used since 1945 mainly for the local treatment of skin infections and orally in treatment of refractory African trypanosomiasis, a sleeping sickness. Current brand name is Nitrofurazone. | O: Pharmaceutical manufacturing workers. GP: Those who are prescribed the drug. | None located. |
| Phenesterin (3546-10-9) | Pharmaceutical drug | Evidence of mammary (breast) tumors in lab animals (NTP TR #60) | Not listed | No | Not marketed | Not Applicable | Used as an experimental anti-cancer drug. It is a steroidal alkylating agent composed of the carboxylic acid ester of cholesterol and an aryl nitrogen mustard. | O: Pharmaceutical manufacturing workers. GP: Those who were prescribed the drug. | None located. |
| Procarbazine hydrochloride (366-70-1) | Pharmaceutical drug | Reasonably anticipated to be a human carcinogen (DHHS) | Group 2A: Probably carcinogenic to humans | Yes | - | Not Applicable | Used as an anti-cancer drug (chemotherapeutic and antineoplastic agent) especially in the treatment of Hodgkin's disease and brain tumors. Used when patients are unresponsive to other drugs. Brand name is Matulane. | <i>Only pertains to workers living outside the U.S.A.</i> O: Pharmaceutical manufacturing workers. GP: Those who are prescribed the drug. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Reserpine (50-55-5) | Pharmaceutical drug | Reasonably anticipated to be a human carcinogen (DHHS) | Group 3: Not classifiable as to its carcinogenicity to humans | Yes. It is also produced by certain plants. | - | Reserpine is a naturally occurring alkaloid produced by the plant Rauwolfia Serpentina in South East Asia. | Prescribed to patients with hypertension and is used as a sedative for those with mild anxiety and chronic psychoses. Current brand names include: Reserpine, Diupres, Rense-R and Serpalan. Many other reserpine containing drugs are no longer marketed. | O: Pharmaceutical manufacturing workers and health professionals dispensing the drug. GP: Those who are prescribed the drug. Also possible exposure via contamination found in waste streams near production facilities. | Yes, it is listed in the Hazard Communication Standard and posted as a chemical hazard in labs. |
| Ethylene oxide (75-21-8) | Sterilizing agent for medical instruments | Known human carcinogen (DHHS) | Group 1: Carcinogenic to humans | Yes, but is on the decline | Since 1990 other methods have been employed to sterilize instruments | Not Applicable | Mostly used up until 1990 to sterilize hospital equipment. Although on the decline, this is still a minor use of ethylene oxide in the U.S. | O: Medical technicians responsible for care of hospital instruments. Due to improper ventilation and engineering, these people were the most at risk. | Yes, they declared a permissible exposure limit, require use of personal protection equipment (respirators), posted it as a chemical hazard in labs and included in the Hazard Communication Standard. |

EnviroChem and Cancer Database (EDDC) Chemicals Found to Cause Mammary Tumors in Laboratory Animals by the National Toxicology Program

| Chemical Name (CAS #) | What is / was chemical's major use? | Cancer Classification DHHS / NTP RoC (NTP TR #) | Cancer Classification (IARC) | Is chemical currently produced / used in the U.S.? | If not currently in use, when was it taken off the market? (date) | Was chemical used in manufacturing? | Which consumer products is / was chemical found in? | Location of most prominent exposure? O = occupations H = households GP = general population | Are there any OSHA regulations / advisories? |
|------------------------------------|---|---|---|--|--|--|--|--|--|
| 5-Nitroacenaphthene (602-87-9) | Research chemical | Evidence of mammary (breast) tumors in lab animals (NTP TR #118) | Group 2B: Possibly carcinogenic to humans | Yes | - | In the U.S.A., used solely for research purposes. Used in manufacturing dyes in Japan. | In the U.S.A., has no known commercial uses. In Japan, is used in the manufacturing of naphthalimide dyes, which are used as whitening agents in laundry detergents, and paper dyes. | O: In the U.S.A., researchers using this chemical. In Japan, in dye manufacturing workers. | None located. |
| 2-Chloroacetophenome (532-27-4) | Riot control / Tear gas | Evidence of mammary (breast) tumors in lab animals (NTP TR #379) | Not listed | Yes | - | Not Applicable | Used for personal protection. Sold with brand names such as Mace [®] or Chemical Mace [®] . | O: Producers of Mace [®] . GP: Those that are exposed to Mace [®] . | Yes, they have declared a permissible exposure limit. |

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We hope you find this spreadsheet to be informative. We welcome your comments.

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