

Appendix

Chemical Detection Project: Full List of Chemicals Detected

1,6-DIMETHYLNAPHTHALENE (CASRN: 575-43-9)

Specific Hazards:¹ No data

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of:² Air

Government Resource: <http://toxnet.nlm.nih.gov/> (search term: 1,6-dimethylnaphthalene)

1-METHYLNAPHTHALENE (CASRN: 90-12-0)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Combustion by-product, chemical intermediate

Found in or Used in the Manufacture of: Air; pesticides (inert ingredient); food packaging and additives; ink, pigments, and dyes

Government Resource: <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=43>

2,2',4,6'-TETRABROMODIPHENYL ETHER (BDE 51) (CASRN: 189084-57-9)

Specific Hazards: Medium hazard for endocrine disruption activity

Primary Function(s): Flame retardant

Found in or Used in the Manufacture of: Building materials; fabric, furniture, and upholstery; electronics

Government Resource: http://www.toxtown.nlm.nih.gov/text_version/chemicals.php?id=79

2,6-DIMETHYLNAPHTHALENE (CASRN: 581-42-0)

Specific Hazards: No data

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; food packaging and additives

Government Resource: Not available

2-METHYLNAPHTHALENE (CASRN: 91-57-6)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Combustion by-product, chemical intermediate

Found in or Used in the Manufacture of: Air; pesticides (inert ingredient); building materials; ink, pigments, and dyes; petroleum products/fuels

Government Resource: <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=43>

¹ Chemical hazards data is based on the Pharos Project database, available here: <https://www.pharosproject.net/>

² Chemical uses data is based primarily on EPA's CPCat database (<http://actor.epa.gov/cpcat/faces/home.xhtml>), ATSDR's Substance List (<http://www.atsdr.cdc.gov/substances/indexAZ.asp>), and EPA's InertFinder database (<http://iaspub.epa.gov/apex/pesticides/f?p=101:1>).

4-CHLORO-3-METHYLPHENOL (CASRN: 59-50-7)

Specific Hazards: High hazard for skin sensitization; medium hazard for endocrine disruption activity, skin irritation

Primary Function(s): Preservative in personal care products (antimicrobial), antiseptic, pesticide (industrial preservative) ("Other")

Found in or Used in the Manufacture of: Personal care products; pesticides; food packaging and additives; cleaning products; building materials; fabric, furniture, and upholstery; ink, pigments, and dyes; pharmacological products

Government Resource: Not available

4-CHLOROPHENYL ISOCYANATE (CASRN: 104-12-1)

Specific Hazards: High hazard for skin irritation; medium hazard for cancer, respiratory effects, organ toxicity

Primary Function(s): Chemical intermediate in manufacture of pesticides and pharmaceuticals ("Other")

Found in or Used in the Manufacture of: Pesticides (inert ingredient); pharmacological products

Government Resource: <http://toxnet.nlm.nih.gov/> (search term: 4-Chlorophenyl isocyanate)

ACENAPHTHENE (CASRN: 83-32-9)

Specific Hazards: PBT; high hazard for cancer

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; pesticides (manufacture); building materials; ink, pigments, and dyes; pharmacological products

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/pahs.pdf>

ACENAPHTHYLENE (CASRN: 208-96-8)

Specific Hazards: PBT; high hazard for cancer

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/pahs.pdf>

ANTHRACENE (CASRN: 120-12-7)

Specific Hazards: PBT; high hazard for cancer, skin sensitization; medium hazard for endocrine disruption activity, respiratory effects, skin irritation

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; pesticides (manufacture); building materials; manufacture/maintenance of vehicles; ink, pigments, and dyes; pharmacological products

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/anthrace.pdf>

BENZOPHENONE (CASRN: 119-61-9)

Specific Hazards: High hazard for cancer; medium hazard for endocrine disruption activity

Primary Function(s): UV filter and fragrance enhancer in personal care products, food additive

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); food packaging and additives; cleaning products; building materials; fabric, furniture, and upholstery; paper products; ink, pigments, and dyes; toys and children's products; electronics; cigarette chemicals; pharmacological products

Government Resource: <http://hpd.nlm.nih.gov/cgi-bin/household/brands?tbl=chem&id=570&query=119-61-9&searchas=TblChemicals>

BENZYL BENZOATE (CASRN: 120-51-4)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Fragrance fixative and preservative in personal care products, food additive, antiparasitic (treats scabies), pesticide, solvent, plasticizer

Found in or Used in the Manufacture of: Personal care products; air fresheners; pesticides (inert ingredient); food packaging and additives; cleaning products; building materials; manufacture/maintenance of vehicles; cigarette chemicals; pharmacological products

Government Resource: <http://hpd.nlm.nih.gov/cgi-bin/household/brands?tbl=chem&id=2881&query=120-51-4&searchas=TblChemicals>

BIFENTHRIN (CASRN: 82657-04-3)

Specific Hazards: PBT; high hazard for organ toxicity; medium hazard for cancer, endocrine disruption activity, respiratory effects, skin irritation

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Pesticides

Government-Academic Collaboration: <http://npic.orst.edu/factsheets/biftech.pdf>

BIPHENYL (CASRN: 92-52-4)

Specific Hazards: High hazard for skin irritation; medium hazard for cancer, endocrine disruption activity, respiratory effects, organ toxicity

Primary Function(s): Chemical intermediate ("Other")

Found in or Used in the Manufacture of: Air; personal care products; pesticides (inert ingredient); food packaging and additives; building materials; paper products

Government Resource: <http://www.epa.gov/ttnatw01/hlthef/biphenyl.html>

BIS(2-ETHYLHEXYL)PHTHALATE (DEHP) (CASRN: 117-81-7)

Specific Hazards: High hazard for cancer, developmental effects, reproductive effects; medium hazard for endocrine disruption activity, respiratory effects, organ toxicity, skin irritation; potential concern for neurotoxicity

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Air; personal care products; pesticides (inert ingredient); food packaging and additives; cleaning products; building materials; fabric, furniture, and upholstery; manufacture/maintenance of vehicles; ink, pigments, and dyes; arts, crafts, hobby materials; toys and children's products; electronics; pharmacological products

Government Resource: <http://www.atsdr.cdc.gov/phs/phs.asp?id=376&tid=65>

BISPHENOL A (BPA) (CASRN: 80-05-7)

Specific Hazards: High hazard for developmental effects, reproductive effects, skin sensitization; medium hazard for endocrine disruption activity, respiratory effects, organ toxicity, skin irritation

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Food packaging and additives; building materials; manufacture/maintenance of vehicles; paper products; ink, pigments, and dyes; arts, crafts, hobby materials; toys and children's products; electronics; petroleum products/fuels

Government Resource: https://www.niehs.nih.gov/health/assets/docs_a_e/bisphenol_a_bpa_508.pdf

BUTYL BENZYL PHTHALATE (BBP) (CASRN: 85-68-7)

Specific Hazards: High hazard for developmental effects, reproductive effects; medium hazard for cancer, endocrine disruption activity, respiratory effects, skin irritation

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Air; personal care products; pesticides (inert ingredient); food packaging and additives; building materials; manufacture/maintenance of vehicles; paper products; ink, pigments, and dyes; arts, crafts, hobby materials; toys and children's products

Government Resource: <http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/phthalates.html>

BUTYLATED HYDROXYANISOLE (BHA) (CASRN: 25013-16-5)

Specific Hazards: High hazard for cancer, skin sensitization; medium hazard for developmental effects, reproductive effects, endocrine disruption activity

Primary Function(s): Preservative (antioxidant) in personal care products and food

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); food packaging and additives; building materials; toys and children's products; pharmacological products

Government Resource: <https://ntp.niehs.nih.gov/ntp/roc/content/profiles/butylatedhydroxyanisole.pdf>

CAFFEINE (CASRN: 58-08-2)

Specific Hazards: Medium hazard for endocrine disruption activity

Primary Function(s): Food additive ("Other")

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); food packaging and additives; cigarette chemicals; pharmacological products

Government Resource: <http://www.fda.gov/downloads/UCM200805.pdf>

CARVONE (CASRN: 99-49-0)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Preservative (antimicrobial) in personal care products, food additive, fragrance, pesticide (insect repellent) ("Other")

Found in or Used in the Manufacture of: Personal care products; pesticides; food packaging and additives; cleaning products; cigarette chemicals

Government Resource: <http://toxnet.nlm.nih.gov/> (search term: carvone)

CASHMERAN (CASRN: 33704-61-9)

Specific Hazards: Medium hazard for endocrine disruption activity

Primary Function(s): Fragrance

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); cleaning products

Government Resource: Not available

DIBENZOFURAN (CASRN: 132-64-9)

Specific Hazards: PBT

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air

Government Resource: <http://www.epa.gov/ttnatw01/hlthef/di-furan.html>

DICYCLOHEXYL PHTHALATE (DCHP) (CASRN: 84-61-7)

Specific Hazards: High hazard for reproductive effects; medium hazard for endocrine disruption activity, respiratory effects

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Food packaging and additives; building materials; ink, pigments, and dyes

Government Resource: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html

DIETHYL PHTHALATE (DEP) (CASRN: 84-66-2)

Specific Hazards: High hazard for reproductive effects, skin sensitization; medium hazard for endocrine disruption activity, respiratory effects, skin irritation

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); food packaging and additives; cleaning products; building materials; manufacture/maintenance of vehicles; ink, pigments, and dyes; toys and children's products; pharmacological products

Government Resource: <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=112>

DIISOBUTYL PHTHALATE (DIBP) (CASRN: 84-69-5)

Specific Hazards: High hazard for developmental effects, reproductive effects; medium hazard for endocrine disruption activity, respiratory effects

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Food packaging and additives; building materials; fabric, furniture, and upholstery; manufacture/maintenance of vehicles; paper products; ink, pigments, and dyes; toys and children's products

Government Resource: http://toxtown.nlm.nih.gov/text_version/chemicals.php?id=24

DI-N-HEXYL PHTHALATE (DHEXP) (CASRN: 84-75-3)

Specific Hazards: High hazard for reproductive effects; medium hazard for developmental effects, endocrine disruption activity, respiratory effects

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Pesticides (inert ingredient); food packaging and additives; building materials; manufacture/maintenance of vehicles; toys and children's products

Government Resource: http://toxtown.nlm.nih.gov/text_version/chemicals.php?id=24

DI-N-NONYL PHTHALATE (CASRN: 84-76-4)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Data unavailable

Government Resource: http://toxtown.nlm.nih.gov/text_version/chemicals.php?id=24

DI-N-OCTYL PHTHALATE (DnOP) (CASRN: 117-84-0)

Specific Hazards: High hazard for skin sensitization; medium hazard for developmental effects, endocrine disruption activity, respiratory effects; low hazard for reproductive effects

Primary Function(s): Plasticizer

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); food packaging and additives; building materials; manufacture/maintenance of vehicles; arts, crafts, hobby materials; toys and children's products; electronics; pharmacological products

Government Resource: <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=204>

DIPHENYLAMINE (CASRN: 122-39-4)

Specific Hazards: High hazard for skin sensitization; medium hazard for cancer, developmental effects, reproductive effects, organ toxicity

Primary Function(s): Pesticide (antioxidant)

Found in or Used in the Manufacture of: Pesticides; food packaging and additives; building materials; manufacture/maintenance of vehicles; ink, pigments, and dyes; petroleum products/fuels

Government Resource: <http://www.epa.gov/opp00001/reregistration/REDS/factsheets/2210fact.pdf>

ETHOFENPROX (CASRN: 80844-07-1)

Specific Hazards: High hazard for developmental effects; medium hazard for endocrine disruption activity

Primary Function(s): Pesticide (used to repel bed bugs)

Found in or Used in the Manufacture of: Pesticides

Government Resource: <http://householdproducts.nlm.nih.gov/cgi-bin/household/brands?tbl=chem&id=2105&query=80844-07-1&searchas=TblChemicals>

EUGENOL (CASRN: 97-53-0)

Specific Hazards: High hazard for respiratory effects, skin sensitization; medium hazard for skin irritation

Primary Function(s): Fragrance, food additive, antiseptic, analgesic (“Other”)

Found in or Used in the Manufacture of: Personal care products; air fresheners; pesticides (active and inert ingredient); food packaging and additives; cleaning products; building materials; manufacture/maintenance of vehicles; pharmacological products; petroleum products/fuels

Government Resource: <http://householdproducts.nlm.nih.gov/cgi-bin/household/brands?tbl=chem&id=1925&query=97-53-0&searchas=TblChemicals>

FIPRONIL (CASRN: 120068-37-3)

Specific Hazards: PBT; high hazard for organ toxicity; medium hazard for reproductive effects, endocrine disruption activity; potential concern for neurotoxicity

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Pesticides

Government-Academic Collaboration: <http://npic.orst.edu/factsheets/fipronil.html>

FLUORANTHENE (CASRN: 206-44-0)

Specific Hazards: PBT; high hazard for cancer; medium hazard for endocrine disruption activity

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; building materials

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/pahs.pdf>

FLUORENE (CASRN: 86-73-7)

Specific Hazards: PBT; high hazard for cancer; medium hazard for endocrine disruption activity

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; pesticides (manufacture); building materials; ink, pigments, and dyes

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/flourene.pdf>

GALAXOLIDE (CASRN: 1222-05-5)

Specific Hazards: PBT; high hazard for developmental effects³; medium hazard for endocrine disruption activity

Primary Function(s): Fragrance

Found in or Used in the Manufacture of: Personal care products; air fresheners; pesticides (inert ingredient); cleaning products; building materials; manufacture/maintenance of vehicles

Government Resource: http://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryID=245534

METHOPRENE II (CASRN: 999045-03-3)

Specific Hazards: Medium hazard for endocrine disruption activity

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Pesticides

Government-Academic Collaboration: <http://npic.orst.edu/factsheets/methogen.html#whatis>

³ Evidence for reproductive/developmental effects for galaxolide is based on preliminary studies. The majority of research demonstrates that galaxolide exerts its toxic effects on the environment; there is limited data to indicate that this chemical is toxic to humans.

MUSK KETONE (CASRN: 81-14-1)

Specific Hazards: PBT; medium hazard for cancer, endocrine disruption activity

Primary Function(s): Fragrance

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); food packaging and additives; cleaning products

Government Resource: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7694>

N,N-DIETHYL-M-TOLUAMIDE (DEET) (CASRN: 134-62-3)

Specific Hazards: High hazard for skin irritation

Primary Function(s): Pesticide (insect repellent)

Found in or Used in the Manufacture of: Personal care products; pesticides;

Government Resource: <http://www2.epa.gov/insect-repellents/deet>

NAPHTHALENE (CASRN: 91-20-3)

Specific Hazards: PBT; high hazard for cancer, organ toxicity, skin sensitization; medium hazard for endocrine disruption activity, skin irritation

Primary Function(s): Combustion by-product, chemical intermediate (manufacture of plastic and moth repellants)

Found in or Used in the Manufacture of: Air; pesticides (inert ingredient); cleaning products; building materials; fabric, furniture, and upholstery; manufacture/maintenance of vehicles; ink, pigments, and dyes; petroleum products/fuels; pharmacological products

Government Resource: <http://www.epa.gov/ttnatw01/hlthef/naphthal.html>

NICOTINE (CASRN: 54-11-5)

Specific Hazards: High hazard for developmental effects; medium hazard for reproductive effects, endocrine disruption activity; potential concern for neurotoxicity

Primary Function(s): Tobacco derivative (“Other”)

Found in or Used in the Manufacture of: Cigarette chemicals; pharmacological products

Government Resource:

http://www.fda.gov/TobaccoProducts/default.htm?utm_campaign=Google2&utm_source=fdaSearch&utm_medium=website&utm_term=tobacco&utm_content=1

O-PHENYLPHENOL (CASRN: 90-43-7)

Specific Hazards: High hazard for cancer, skin irritation; medium hazard for endocrine disruption activity, respiratory effects, organ toxicity

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Personal care products; pesticides; food packaging and additives; cleaning products; building materials; fabric, furniture, and upholstery; paper products

Government Resource: http://www.cdc.gov/biomonitoring/Orthophenylphenol_BiomonitoringSummary.html

PERMETHRIN (CASRN: 52645-53-1)

Specific Hazards: High hazard for respiratory effects; medium hazard for endocrine disruption activity, organ toxicity, skin sensitization, skin irritation

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Personal care products; pesticides; building materials; fabric, furniture, and upholstery; paper products; pharmacological products

Government Resource: http://www.epa.gov/oppsrrd1/reregistration/REDS/factsheets/permethrin_fs.htm

PHENANTHRENE (CASRN: 85-01-8)

Specific Hazards: PBT; high hazard for cancer, skin sensitization; medium hazard for endocrine disruption activity

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; pesticides (manufacture); building materials; ink, pigments, and dyes; pharmacological products; explosives

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/phenanth.pdf>

PIPERONYL BUTOXIDE (CASRN: 51-03-6)

Specific Hazards: Medium hazard for endocrine disruption activity, skin irritation

Primary Function(s): Pesticide (synergist)

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); pharmacological products

Government-Academic Collaboration: <http://npic.orst.edu/factsheets/pbotech.pdf>

PROMECARB (CASRN: 2631-37-0)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Pesticides

Government Resource: Not available

PROMECARB ARTIFACT [5-isopropyl-3-methylphenol] (CASRN: 485106)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Pesticides

Government Resource: Not available

PYRENE (CASRN: 129-00-0)

Specific Hazards: PBT; high hazard for cancer; medium hazard for endocrine disruption activity

Primary Function(s): Combustion by-product

Found in or Used in the Manufacture of: Air; pesticides (manufacture); personal care products; cleaning products; building materials; manufacture/maintenance of vehicles; ink, pigments, and dyes

Government Resource: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/pyrene.pdf>

PYRIPROXYFEN (CASRN: 95737-68-1)

Specific Hazards: Medium hazard for endocrine disruption activity

Primary Function(s): Pesticide

Found in or Used in the Manufacture of: Pesticides

Government Resource: <http://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=95737-68-1&tbl=TblChemicals&prodcat=all>

THYMOL (CASRN: 89-83-8)

Specific Hazards: Very high hazard for skin irritation; medium hazard for respiratory effects

Primary Function(s): Preservative (antimicrobial) in personal care products, food additive, fragrance, pesticide ("Other")

Found in or Used in the Manufacture of: Personal care products; pesticides; food packaging and additives; cleaning products; building materials; cigarette chemicals; pharmacological products

Government Resource: <http://hpd.nlm.nih.gov/cgi-bin/household/brands?tbl=chem&id=437&query=thymol&searchas=TblChemicals>

TONALIDE (CASRN: 1506-02-1)

Specific Hazards: Medium hazard for endocrine disruption activity

Primary Function(s): Fragrance

Found in or Used in the Manufacture of: Personal care products; pesticides (inert ingredient); cleaning products; building materials

Government Resource: <http://toxnet.nlm.nih.gov/> (search term: tonalide)

TRIBUTYL PHOSPHATE (TBP) (CASRN: 126-73-8)

Specific Hazards: High hazard for skin irritation; medium hazard for cancer, developmental effects; potential concern for neurotoxicity

Primary Function(s): Flame retardant, plasticizer, solvent

Found in or Used in the Manufacture of: Pesticides (inert ingredient); food packaging and additives; cleaning products; building materials; fabric, furniture, and upholstery; manufacture/maintenance of vehicles; ink, pigments, and dyes; electronics; toys and children's products; petroleum products/fuels

Government Resource: <http://www.atsdr.cdc.gov/phs/phs.asp?id=1118&tid=239>

TRICLOSAN (CASRN: 3380-34-5)

Specific Hazards: PBT; high hazard for skin irritation; medium hazard for endocrine disruption activity

Primary Function(s): Preservative (antimicrobial) in personal care products and other consumer products, pesticide

Found in or Used in the Manufacture of: Personal care products; pesticides; cleaning products; building materials; fabric, furniture, and upholstery; pharmacological products

Government Resource: <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm205999.htm>

TRIETHYLPHOSPHATE (CASRN: 78-40-0)

Specific Hazards: Little human data available; harmful if swallowed

Primary Function(s): Flame retardant, plasticizer, chemical intermediate, solvent

Found in or Used in the Manufacture of: Pesticides (inert ingredient); food packaging and additives; building materials; electronics

Government Resource: <http://toxnet.nlm.nih.gov/> (search term: triethylphosphate)

TRIPHENYL PHOSPHATE (TPP) (CASRN: 115-86-6)

Specific Hazards: Medium hazard for endocrine disruption activity; potential concern for neurotoxicity

Primary Function(s): Flame retardant

Found in or Used in the Manufacture of: Pesticides (inert ingredient); food packaging and additives; building materials; fabric, furniture, and upholstery; manufacture/maintenance of vehicles; paper products; ink, pigments, and dyes; arts, crafts, hobby materials; toys and children's products; electronics

Government Resource: <http://www.atsdr.cdc.gov/phs/phs.asp?id=1118&tid=239>

TRIS(2-CHLOROETHYL) PHOSPHATE (TCEP) (CASRN: 115-96-8)

Specific Hazards: PBT; high hazard for cancer, reproductive effects; medium hazard for skin irritation

Primary Function(s): Flame retardant

Found in or Used in the Manufacture of: Personal care products; building materials; manufacture/maintenance of vehicles; toys and children's products

Government Resource: <http://www.atsdr.cdc.gov/phs/phs.asp?id=1118&tid=239>

TRIS(2-CHLORO-1-METHYLETHYL) PHOSPHATE (TCPP) (CASRN: 13674-84-5)

Specific Hazards: PBT

Primary Function(s): Flame retardant

Found in or Used in the Manufacture of: Pesticides (inert ingredient); building materials; fabric, furniture, and upholstery; electronics

Government Resource: <http://www.atsdr.cdc.gov/phs/phs.asp?id=1118&tid=239>

TRIS(2-ETHYLHEXYL) PHOSPHATE (TEHP) (CASRN: 78-42-2)

Specific Hazards: Medium hazard for skin irritation

Primary Function(s): Flame retardant, plasticizer, solvent

Found in or Used in the Manufacture of: Pesticides (inert ingredient); food packaging and additives; building materials; fabric, furniture, and upholstery

Government Resource:

http://oehha.ca.gov/prop65/public_meetings/CIC101211/101211Tris2ethylhexylphosphate.pdf

Definitions

Hazard – The hazard of a chemical refers to its intrinsic ability to cause harm or induce a toxic effect, such as those listed below in “Chemical Hazard Types.” Risk is a function of both *hazard* and *exposure*, the amount of the chemical substance that enters a person’s body. Assuming a constant exposure, chemicals will differ in the type and magnitude of toxic effect(s) that they may induce.

Persistent bioaccumulative toxic chemicals (“PBTs”) – Chemicals that do not break down readily from natural processes, accumulate in organisms concentrating as they move up the food chain, and are harmful in small quantities.

Chemical Hazard Types*

Cancer – Can cause or increase the risk of cancer.

Developmental effects – Can cause harm to the developing child including birth defects, low birth weight and biological or behavioral problems that appear as the child grows.

Reproductive effects – Can disrupt the male or female reproductive systems, changing sexual development, behavior or functions, decreasing fertility, or resulting in loss of the fetus during pregnancy.

Endocrine disruption activity – Can interfere with hormone communication and production, which controls metabolism, development, growth, reproduction and behavior.

Respiratory effects – Can result in high sensitivity such that small quantities trigger asthma, rhinitis or other allergic reactions in the respiratory system.

Skin Sensitization – Can trigger allergic reactions on the skin.

Skin irritation – Can cause irritation or serious damage to the skin.

Functions & Uses

Chemicals in Personal Care Products – Chemicals added to personal care products (e.g., lotions, soaps, and cosmetics), such as preservatives and antimicrobials. Plasticizers and fragrances (see below) are excluded from this category.

Combustion By-products – Chemicals formed from the incomplete burning of coal, oil, gas, garbage, or other organic substances. Most chemicals included in this category are polycyclic aromatic hydrocarbons (PAHs).

Flame Retardants – Chemicals added to a variety of materials, including textiles, electronics, plastics, and foam to reduce flammability.

Fragrances – Chemicals with an inherent odor. These chemicals are often added to personal care products, cleaning products, food products, and more.

*Chemical hazard type definitions are based on the Pharos database, available here: <https://www.pharosproject.net/>



Pesticides – Chemicals designed to kill, repel, or mitigate any pest (insects, rodents, weeds, fungi, and microorganisms). This category excludes antimicrobials designed for use in personal care products.

Plasticizers – Chemicals used to provide plasticity and flexibility to plastics, such as polyvinylchloride (PVC). This category includes phthalate chemicals, which are added a variety items including construction materials, personal care products, toys, food packaging, medical devices, and more.

Other – The “Other” category includes food additives, tobacco derivatives, chemical intermediates, and chemicals that cannot be classified due to many overlapping functions.