NHMRC 2022 CEO Statement on E-cigarettes

All chemicals listed below are known to be harmful to inhale and are known to be in e-cigarettes.

Chemical	**CAS**	**Typical use(s) as per AICIS public health assessment reports**
Benzene (may be fatal if inhaled)	100-41-4	**The following Australian uses have been identified** The chemical has reported domestic uses in consumer products including: • household paints, paint thinners, paint and varnish removers • automotive paints, primers and polishes • floor and furniture polishes • oven, tile and upholstery cleaning and sanitation agents. The chemical has reported commercial uses including: • as a component of gasoline (2 % w/w) • production of plastic foam insulation in building and construction • a constituent of asphalt and naphtha. The chemical has non-industrial uses in: • herbicides • insecticides.
Styrene	100-42-5	The following Australian industrial uses were reported under previous mandatory and/or voluntary calls for information The chemical has reported commercial use including as a: • construction material additive • fibreglass reinforcement in swimming pools (filled plastic).

Benzyl alcohol	100-51-6	No specific Australian use, import, or manufacturing information has been identified. **The following international uses have been identified** The chemical has reported cosmetic uses including as: • a fragrance ingredient • a solvent and preservative • a viscosity decreasing agent • an oral health care agent. The chemical has reported domestic uses including in: • adhesives, binding agents • bleaching agents • cleaning/ washing agents • colouring agents • corrosion inhibitors • fillers • odour agents • surface treatments • surface-active agents • paints, lacquers and varnishes. The chemical has reported commercial uses including: • in absorbents and adsorbents • in anti-freezing and anti-static agents • in construction and impregnation materials • as a fixing agent • in lubricants and additives • as a solvent and viscosity adjustor • in welding and soldering agents • in reprographic agents • in photo chemicals and process regulators. The following non-industrial uses have been identified: • in food/ feedstuff flavourings and nutrients • in non-agricultural pesticides and preservatives • in pharmaceuticals.

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Benzaldehyde	100-52-7	The following Australian industrial uses were reported under previous mandatory and/or voluntary calls for information. The chemical has reported: • cosmetic use as a fragrance ingredient • domestic use in home care applications • commercial use as a plastic additive • site-limited use as an intermediate.
Acrolein (fatal if inhaled)	107-02-8	**The following Australian uses have been identified** The chemical has reported commercial and site-limited use including as: • an intermediate for manufacturing plastics and colloidal forms of metal • an additive in perfumes.
Allyl alcohol (fatal if inhaled)	107-18-6	No specific Australian use, import, or manufacturing information has been identified. **The following international uses have been identified** The chemical has reported non-industrial use as an intermediate in the pharmaceutical industry and contact pesticide for weed seeds and certain fungi.
Ethandial or Glyoxal	107-22-2	No specific Australian use, import, or manufacturing information has been identified. The following international uses have been identified The chemical has reported cosmetic use including as: • a fragrance ingredient • an antimicrobial, preservative in hair dyes and colours • in hair conditioners, styling gel/ lotions, and nail hardeners. The chemical has reported domestic use including: • as a disinfectant or a cleaning agent. The chemical has reported commercial use including: • in adhesives, sealants, construction materials, coatings, paints, lacquers and varnishes • as a reducing agent in the photographic industry.

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Toluene (may be fatal if inhaled)	108-88-3	**The following Australian uses have been identified** The chemical has reported domestic use including: • cleaning products. The chemical has reported commercial use including: • in fuels and solvents • in adhesives • in printer inks • in degreasers • as an aviation fuel additive.
Phenol or carbolic acid	108-95-2	**The following Australian uses have been identified** The chemical has reported commercial use including in: • adhesives (binding agents) • plastics • surface coatings.
Hexane (may be fatal if inhaled)	110-54-3	The chemical has reported commercial uses in: • adhesives • as a cleaning agent in the roofing, textile, furniture, shoemaking and printing industries.
Pentanal	110-62-3	No specific Australian use, import, or manufacturing information has been identified. **The following international uses have been identified** • The chemical has reported cosmetic use in perfuming. • The chemical has reported non-industrial uses as a flavouring agent.
Cyclohexane (may be fatal if inhaled)	110-82-7	Cosmetic

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Pyridine	110-86-1	No use information has been identified in Australia. **The following international uses have been identified** The chemical has reported cosmetic or domestic use as a fragrance compound The chemical has reported non-industrial uses: • for manufacturing pharmaceuticals • as a food flavouring • for manufacturing pesticides.
Beta-Pinene (may be fatal if inhaled)	127-91-3	**The following Australian uses have been identified** Reported domestic uses in automotive aftermarket products including car wash soaps, boat wash soaps, polishes and rubbing compounds.
Xylene (may be fatal if inhaled)	1330-20-7	**The following Australian uses have been identified** Mixed xylenes has reported commercial use including: • component of fuel • industrial and automotive surface coatings • inks and cleaners in screen and lithographic printing • lacquers and solvents.

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Crotonaldehyde (fatal if inhaled)	4170-30-3	No specific Australian use, import, or manufacturing information has been identified. The chemical has reported cosmetic use as a fragrance additive. The chemical has reported commercial uses, including: • in rubber accelerators as an antioxidant and a rubber strengthener • in leather tanning • as a warning agent in fuel gases • as a stabiliser for tetraethyl lead • as an alcohol denaturant • in the preparation of surface active agents • in the preparation of construction materials such as fillers • in the purification of mineral and lubricating oils. The chemical has reported non-industrial use, including: • in flavouring agents • in the preparation of pesticidal compounds, fertilisers and chemotherapeutic agents.
Diacetyl (causes irreversible lung damage if inhaled)	431-03-8	Used in: • air care products • cleaning and furniture care products • paints and coatings • personal care products not covered by other end uses • personal vaporizer.
Formaldehyde (fatal if inhaled)	50-00-0	The main industrial use of formaldehyde and paraformaldehyde is for the manufacture of formaldehyde-based resins, which are widely used in a variety of industries, predominantly the wood industry. Formaldehyde is also used directly or in formulations in a number of industries including medicine-related industries (such as forensic/ hospital mortuaries and pathology laboratories), embalming in funeral homes, film processing, textile treatments, leather tanning, and a wide range of personal care and consumer products.
Acetoin (causes irreversible lung damage if inhaled)	513-86-0	Information not available.

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Nicotine (fatal if inhaled)	54-11-5	Information not available.
Glycidol (fatal if inhaled)	556-52-5	No specific Australian industrial use, import, or manufacturing information has been identified. **The following international uses have been identified** The chemical has reported commercial use as an additive (demulsifier) for oil and synthetic hydraulic fluids. The chemical has reported non-industrial uses: • as a sterilant in pharmaceuticals • as an intermediate in preparing glycerol and glycidyl ethers, esters and amines in the pharmaceutical industry • in producing flavouring/ sweetening agents and insecticides.
Terpinolene (may be fatal if inhaled)	586-62-9	No specific Australian use, import, or manufacturing information has been identified. However, international uses include: ***Domestic uses*** • Cleaning products • Air fresheners • Surface treatments • Paint lacquers and varnishes • Absorbents and adsorbents • Odour agents ***Commercial uses*** • Manufacture of furniture • Car care products ***Non-industrial users*** • Biocides • Pesticides • Flavouring of food

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Acetyl Propionyl (causes irreversible lung damage if inhaled)	600-14-6	• Air care products • Cleaning and furniture care products • Paints and coatings • Personal care products not covered by other end uses • Personal vaporiser
Dimethylnitrosoamine (may be fatal if inhaled)	62-75-9	Information not available.
Formic acid	64-18-6	No specific Australian use, import, or manufacturing information has been identified. However, international uses include: ***Cosmetic uses*** • Preservative • Fragrance compound • pH adjuster ***Commercial uses*** • A decalcifier in dyeing wool and in tanning leather • Corrosion inhibitors ***Non-industrial uses*** • Food additive
Methanol	67-56-1	***Domestic uses*** • As a solvent • In adhesives as a binding agent ***Commercial uses*** • In fuels as a petrol additive
Benzene/ benzol (may be fatal if inhaled)	71-43-2	• Laboratory chemicals • Fuels • pH regulators • Coating products, putties, plasters, modelling clay • Water treatment products

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Manganese (causes damage to organs through prolonged exposure)	7439-96-5	***Commercial uses*** • A welding and soldering agent • An additive in construction materials • An insulating agent ***Non-industrial uses*** • A substance (a component) that may be used in listed medicines in conjunction with an approved source
Mercury (fatal if inhaled)	7439-97-6	***Commercial uses*** • Batteries • Thermometers and barometers • Thermostats • Floodlights, streetlights or other powerful outdoor lights ***Non-industrial uses*** • As a catalyst in chemical manufacturing • To extract gold and silver ores in mining
Nickel (causes damage to organs through prolonged exposure)	7440-02-0	***Commercial uses*** • As a commercial material additive • In electroplating • As an insulating agent • As a welding and soldering agent
Arsenic	7440-38-2	***Commercial uses*** • As an impregnation and oxidising agent • To harden copper, lead and other alloys ***Non-industrial uses*** • In wood preservatives and pesticides
Cadmium (may be fatal if inhaled)	7440-43-9	***Domestic uses*** • Use in the colouring of plastics and artists' paints ***Commercial uses*** • In photochemicals

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
Cobalt (fatal if inhaled)	7440-48-4	***Commercial uses*** • In epoxy coating
Uranium (fatal if inhaled)	7440-61-1	Information not available.
Acetonitrile	75-05-8	***Commercial uses*** • The photographic industry • Printing inks • The textile industry
Oxirane, propylene oxide	75-56-9	Only site limited Australian uses listed (manufacture of other chemicals). However, international uses include: ***Domestic uses*** • In adhesives and binding agents • In cleaning agents ***Commercial uses*** • In process regulators, synthetic lubricants, and fuel additives • As a stabiliser for dichloromethane and other chlorinated hydrocarbon solvents • In paint, lacquer and varnish production • As an anti-corrosion additive • In construction material production
Selenium	7782-49-2	Information not available.
Chlorine	7782-50-5	***Domestic uses*** • As a bleaching agent • In cleaning and washing agents • As an odour agent. ***Commercial uses*** • As a disinfectant • In chlorine bleach cleaners

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
alpha-Pinene (may be fatal if inhaled)	80-56-8	***Cosmetic uses*** • Fragrance compounds • Components of essential oils ***Domestic uses*** • Automotive aftermarket products including car wash soaps, boat wash soaps, polishes, and rubbing compounds
Furfuryl alcohol	98-00-0	No specific Australian use, import, or manufacturing information has been identified. However, international uses include: ***Cosmetic uses*** • As an ingredient in perfumes and aromatic raw materials ***Commercial uses*** • A viscosity reducer in epoxy resins • An accelerator or liquefier for amine curatives of epoxy resins • A solvent in textile printing and in alkaline paint strippers
Furfural	98-01-1	No specific Australian use, import, or manufacturing information has been identified. However, international uses include: ***Cosmetic uses*** • As an ingredient in fragrance compounds up to 0.1% • As a solvent ***Domestic uses*** • In adhesive and binding materials • In cleaners and detergents ***Commercial users*** • As a solvent to refine lubricating oils • As an ion exchange agent • In shoe dyes • As an analytical reagent

Chemical	CAS	Typical use(s) as per AICIS public health assessment reports
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	99-85-4	No specific Australian use, import, or manufacturing information has been identified. However, international uses include: ***Cosmetic uses*** • As fragrances in perfumes and personal care products ***Domestic uses*** • Cleaning products • Air freshener • Surface treatments • Laundry products • Polishing agents ***Commercial users*** • Manufacture of furniture

The NHMRC 2022 CEO Statement on E-cigarettes is available on NHMRC's website – Electronic cigarettes.

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