

Chemicals - the Invisible Health Hazards in the Home!

There are around 75,000 chemicals in every day use and some 1,000 new ones enter the market every year!! According to the Environmental Working Group, only 2 to 3% have been adequately tested for safety and the threats they pose to your family and your pets. In this instance, we can only tell you what is in our products, summarise the findings and direct you to other sources of data that may help across the entire spectrum.

The potential effects on health

Chemicals can be classified according to the effects they have on human and animal health:

- Eye, skin & respiratory irritants
- Toxic or highly toxic if ingested
- Toxic or highly toxic if inhaled
- Bio-accumulative (build up along the food chain over time)
- Endocrine disruptors (affect the thyroid & reproductive hormones)
- Carcinogenic
- Mood altering

To complicate matters, in many cases it is not the chemical per se but derivatives thereof that are slowly released into the environment.

Where are they found?

Unfortunately everywhere! The most common sources of irritants are soaps, cosmetics, toiletries & household cleaning products although there are some ingredients in these that are potentially bio-accumulative, carcinogenic & endocrine disruptors.

Toxic if ingested are most commonly found in pesticides (insecticides, herbicides & fungicides) used in the home and the garden. Residues are also found in fresh fruit & vegetables and clothing.

Sprays & aerosols are a well known sources of inhaled toxins but few people realise that they are also found in the home generated by the flame retardant treatments applied to furnishings and fabrics and the derivatives that emanate from vinyl floorings, electrical & electronic casings and cables!

Perhaps the most disturbing example of endocrine disruptors is Bis-phenol A commonly used to line food cans & drinks bottles giving a new meaning to "What's your poison?" not to mention parabens that up until recently appeared in every toiletry bottle on your bathroom shelf. In terms of causing cancer, many chemicals are innocent because they have not been proven guilty and there is a long time lapse between cause and affect e.g. Asbestos

COMMON SOURCES OF HARMFUL CHEMICALS

CHEMICALS	Principle Sources	Potential Effects on Human & Animal Health
Alkyltins	PVC Flooring, PVC bottles, & Vinyl toys	Skin, eye & lung irritant. Headaches, nausea, gastric pain, dry mouth, impaired vision, short of breath, liver damage
Alkylphenols	Textiles, leather goods, water based paints & personal care products	Mimic female oestrogen so implicated in endocrine & reproductive disorders
Anthracene oils	Herbicides, insecticides, rat poisons	Toxic & carcinogenic
Arsenic compounds	Herbicides & wood preservatives	Extremely toxic & carcinogenic
Asbestos	Cars, building materials & water	Lung cancer
BisPhenol A	Lining food cans, plastic containers & plastic drinks bottles	Breast cancer, obesity, diabetes, heart disease, neurological disorders, memory loss, mood swings & thyroid malfunction. Mimics oestrogen hormone.
Brominated Flame Retardants	Upholstery, mattresses, carpets & plastic casings	Thyroid imbalances, neurological disorders & cancer
Cadmium compounds	Fungicides	Carcinogenic
Chlorophenoxy chems.	Herbicides	Carcinogenic
Chromium VI c'ds	Insecticides, fungicides & wood preservatives	Carcinogenic
Fluoride	Water & food	Skin, eye, lung & stomach irritant. Degrades into PDBE's causing liver, kidney & thyroid malfunction.
Formaldehyde	Fabrics, drapes, paints, disinfectant, herbicide, germicide, adhesives, cosmetics, deodorants, detergents, foam insulation & water softener	Eye, nose & throat irritant; coughing, bronchitis, asthma symptoms, anxiety & depression
Hexachlorocyclohexanes	Insecticides	Carcinogenic
Lead	Pipes, roofs, water, paints, coatings, & household dust	Anaemia, brain & nerve damage, fatigue irritability & headaches. Miscarriages, stillbirths, loss of appetite, abdominal pain, constipation.
Melamine	Floors & furniture	Bladder & kidney stones; eye, nose & throat irritant; renal failure
Mercury	Thermometers, dental fillings, food, medical, vaccines & toiletries; fungicides	Brain, kidney & lung damage. Impaired vision, hearing, speech & general co-ordination.
Nickel	Fungicides & jewellery	Skin irritant, carcinogenic
Nitrates	Water & food	Usually affects livestock but can cause "blue baby syndrome" in infants i.e. red blood cells lack ability to carry oxygen
Organophosphates	Most commonly used insecticides	Highly toxic – affects the nervous system
Paraffin oil & waxes	Pesticides, toiletries & cosmetics	Skin irritant, carcinogenic
Petroleum oils	Pesticides, wood treatments, fuel oils, toiletries, paints & accessories	Skin & respiratory irritant, toxic & carcinogenic
Parabens	Cosmetics, toiletries & foods	Implicated in breast cancer, contact dermatitis. Mimics female oestrogen hormone
Perchlorate	Taps	Underactive thyroid
Phenols	Disinfectants, toiletries, antiseptics, pesticides	Toxic, skin, eye & lung irritant, carcinogenic
Pyrethrins	Carpets, furnishings, timber, insecticides, insect repellents & some dustmite treatments	Depressed immune system & allergies react, toxic to cats, persistent & carcinogenic
Phthalates	Fragrances, carpets, floors, prints on clothing & toys & cosmetics	Skin & stomach irritant, diarrhoea, hormone imbalances, bronchial obstruction
PCB's	Electrical equipment, adhesives, tapes, oil based paints, plastics & copy paper	Toxic to immune system, reproductive & development disorders,
PFC (Teflon)	Paints, plastics, tape, adhesives, electrical goods, cooking utensils, insulation, motor oil, strip lighting	Testicular, breast, liver & prostate cancer. Hormone imbalances especially pituitary gland
Synthetic Musk	Laundry detergents, air fresheners, soaps, perfumes, hand creams & baby toiletries	Skin & respiratory irritant. Allergenic & Bio-accumulative
Triclosan	Detergents, washing up liquids, soaps, deodorants, cosmetics, lotions, anti-microbial creams, toothpastes, mouth washes, plastics & textiles	Skin irritant, immuno-suppression, organ damage & implicated in cancer. Bio-accumulative.

At this point it is tempting to abandon this attempt at supplying balanced information and conclude that you should retire to a cave in the Outer Hebrides! However, we have to be practical and try and adopt sensible measures to contain the damage to health.

The good news, governments across the globe have been increasingly taking action in this sphere not least because of environmental pressure groups and a number of the chemicals shown above are now being phased out. In the interval, information is power and yes, there are simple things to avoid that can limit the danger to the health of your household.

Safeguarding your health & your home

Check labels & ingredients listings on foods, toiletries & household goods. If labelling is not clear and there is no in-store help or assistance, check the web before you buy. People with a history of allergic reactions and debilitating, non-specific illnesses are especially vulnerable.

Food & Drink

Certified organic is the only sure way of limiting your intake of herbicide, pesticide or fertiliser residue in the food. They are certainly not going to appear on any label.

If you are on limited budgets, recent studies by the Pesticide Action Network (PAN UK) reveal that some fruit & vegetables are more likely to contain residues than others so these would be the priorities for organic purchasing.

PRODUCE	No. Sampled	% with Pesticide Residues
Soft citrus e.g. mandarins	167	100
Citrus	512	91
Pears	1066	73
Bananas	205	71
Strawberries	283	70
Speciality beans	70	76
Salads	70	74
Celery	137	69
Herbs	51	53
Potato chips	48	48
Pearl Barley	4	100
Bran	107	98
Oats	34	85
Wheat Grain	137	82

Other precautions:

TO AVOID

ALTERNATIVES

Tinned & processed foods & foods	Fresh, produce preferably organic
Foods with colours & preservatives	Foods based on traditional Recipes
Drinks in cans & plastic bottles	Fresh fruit juice, smoothies; glass bottled_or cartoned drinks

Wash & peel fruit & vegetables and NEVER microwave food in plastic containers. Use traditional pans and not non-stick i.e. Teflon coated.

For further information, visit www.Pan-uk.org/Projects/Food.htm to see the report "Hidden extras: Pesticides in Your Food"

Clothes

Clothes do bear labels and natural fibres have recognisable characteristics of feel as well as appearance.

TO AVOID

ALTERNATIVES

Synthetic fabrics & "Permanent press" Or "wrinkle free" that are treated with Formaldehyde that will not wash out	Natural fibres – cotton, silk, linen, rayon, merino wool
Biological washing powders	Non-biological washing powders
Synthetically fragranced washing powders, fabric softeners & dryer sheets	Allergy UK, WWF or Nature Watch Trust approved products

Natural fibres are far less allergenic and generate fewer harmful chemicals than synthetics. However, PAN UK have again demonstrated that unless they are certified organic, many will contain residues of pesticides.

For further information, visit www.WearOrganic.org

Household Products

Ingredients listings are not compulsory by law but reputable manufacturers do provide this information (including Bio-Life). If they are very hazardous, there will be hazard warnings on them and the extent of the warnings is a pretty good indicator of variants that are best avoided unless absolutely essential.

TO AVOID

Chlorine bleach, oven & toilet cleaners

Artificially scented air fresheners & other perfumed products

Air fresheners & sprays containing volatile hydrocarbons e.g. propane, n-butene, isobutene, dimethyl ether, methylethyl ether

Organo-phosphate & Pyrethrin based insecticides & acaricides (dustmite treatments) e.g. Permethrin

ALTERNATIVES

Hot water plus simple cleansers such as soap, vinegar, lemon juice, salt or borax

Natural fragrances such as Eucalyptus, dried flowers or cedar blocks

Aerosols containing CO₂, hydrocarbons, nitrogen & hydrofluorocarbons (HFC's) e.g. Bio-Life AirCleanse™

Essential oil based insect repellents & acaricides e.g. Bio-Life MediCleanse™, HomeCleanse™ & FabriCleanse™

Furnishings

This is undoubtedly another minefield for the allergen sensitive, immunocompromised individual – two-legged or four! If you are buying new, always check on the type of flame-retardants, insect repellents, fungicides & stain protection chemicals used by the manufacturer when you purchase new furnishings.

Whilst the worst potential offenders are undoubtedly the vinyl floorings & laminates, even natural wood and fibres can contain pesticide residues and have to be treated by law with fire retardants. Paints and strip lights are all potential contributors to the amount of VOC's (Volatile Organic Compounds) in the home and electrical and electronic equipment are equally responsible with the added disadvantage that they contribute to static and ionic imbalances important to allergy sufferers.

TO AVOID

Vinyl floorings
& laminates

Synthetic fabrics

Melamine

Strip lighting

Synthetic carpets

High VOC (volatile organic compound)
Paints

ALTERNATIVES

Natural stone, tile or wood

Cotton, wool or linen

Wood, marble or slate

Incandescent or energy
savers bulbs (but beware of
breakages because the new
bulbs contain mercury)

Wool carpets or wooden floors
especially if you are allergic to
dustmite

Low or non VOC paints are
now available from most
Manufacturers

Computers & Electronic Equipment

This is an extremely difficult area because plastic casings, leads, cables & associated electrical & telecommunication equipment are not only sources of invisible PCB's & PFC, they are a major source of static. US research has long since shown that asthma sufferers are very sensitive to imbalances in atmospheric ions. On a Swiss mountain, the air will typically contain 7 positive particles for every 6 negative. Homes & offices can end up with ratios of 12 positive to 1 negative!

If you work in an office, try and limit the amount of equipment and the time you spend on them at home especially in the bedroom. Select cleaning materials based on cationic surfactants and not anionic or amphoteric. Use real plants for decoration – they also absorb toxic ions from the air, reduce CO2 & generate oxygen during the daytime.

Toys

Vinyl toys are not recommended for children and needless to say, too much time spent on computer games is not ideal either! This is often easier said than done.

As of 20 July 2009, there is an EU Toy Safety Directive in place that manufacturers have to adopt. Unfortunately, that part that deals with heavy metals and allergenic fragrances does not actually come into effect until 20 July 2013. Meanwhile, look out for national seals of approval e.g. National Parenting Association or TSCP for American toys and be very wary of unlabelled cheap Chinese goods.

Gardens

Pesticides are a huge potential hazard to health! Although the EU is taking active steps to ban or strictly limit the use of the most dangerous, the rate of progress is slow not least by the sheer number of chemicals that have been developed. The most common pesticides, Organophosphates are extremely toxic and the so called safer alternatives have proven to be endocrine modifiers, carcinogenic and bio-accumulative.

Firstly, if you have any old pesticides in your garden shed, you are well advised to dispose of them at a properly regulated facility because many may now be classed so dangerous as to be banned for use in Europe. Secondly, when you buy fresh, we recommend you consult PAN UK's "Directory of least-toxic pest control solutions and products".

Organic growing is not just for the professional; it can also be applied to your own garden given the right information. Composts and mulches can be used as an alternative to fertilisers and weedkillers. Natural seaweed based fertilisers can be used to feed the land and boost your own iodine intake helping you maintain an active thyroid. Sensible crop rotations can reduce the need for nematode and other pest controls and including plants that repel insects such as chives, basil, mint, marigolds and chrysanthemums can reduce the need for insecticides.

Meanwhile, remember to vacuum regularly to prevent build up of pollutants from shoes and general traffic in the home.

For further information, visit:

www.pan-uk.org/Projects/Local/alt~dir/a~z~pest.htm

Toiletries & Cosmetics

Ingredient listings are mandatory for cosmetics and toiletries for all components that are at a level of 1% or more. At Bio-Life we declare all of them and not just part. Do not be phased by the chemical names in small print --- if you are not sure about any ingredient, any reputable manufacturer will provide you with the information. If they do not, we would suggest you seek alternatives. The threats are not just contact irritation, many are implicated in endocrine changes, hormonal disruption, liver & kidney damage, headaches and cancer.

COMMON INGREDIENTS TO AVOID

Sodium laureth sulphate (SLS)	Mono, Di or Triethanolamine
Sodium lauryl sulphate (SLS)	Limonene
Sodium lauryl ether sulphate (SLES)	Lanolin
Tetrasodium	Propylene glycol
Methyl, ethyl, propyl or butyl paraben	Coal Tar
Triclosan	Zinc pyrithione
Alcohol (ethanol)	Synthetic colours
Fragrance or parfum	PVA/VA Copolymer
Urea	Peroxide
Petrolatum (Petroleum Jelly)	Stearalkonium chloride
Lanolin	Phenoxyethanol
Ammonium laureth & lauryl sulphate	Alpha hydroxy acids (AHAs)
Hydantoin DMDM	Sodium hyaluronate
Chlorhexidine chloride	Formaldehyde
Sodium benzoate	Sodium PCA
Methylisothiazoline	Climbazol
Methyl chlorisothiazolinine	PPG-14 Butyl Ether
Polysorbate-n 20 to 85	Tetrasodium EDTA
Sulphur	Polyethylene Terephthalate
Polymethyl methacrylate	Benzaldehyde
Octinoxate isophthalates	Isopropyl myristate

You may note that a number of the ingredients listed are actually found in a significant number of medicated and so-called hypo-allergenic ranges. This is the reason Bio-Life have developed the "Chemical friendly" antimicrobial range, MediCleanse™. Based on carefully screened natural ingredients whenever possible. The use of some synthetics are essential --- foaming agents do not exist in nature with the exception of the Indian Soap Stone and the available supply would not meet the needs of the world for more than 1 week!!

Bio-Life Ingredients and Monitoring

Bio-Life products contain no phthalates, parabens, synthetic fragrances, alcohols nor any of the other chemicals identified as toxic, allergenic or bio-accumulative in this article. All the ingredients in our Home Care range have been screened and the Bio-Life MediCleanse range is the recipient of an Allergy UK "Chemical Friendly Award".

Key Constituents

- Negatively charged surfactants that encapsulate surplus positive ions in the home with a history of low toxicity, allergenicity and bio-accumulation that may cause endocrine, hormonal imbalances or cancer
- Natural organic preservatives
- Trigger sprays rather than aerosols whenever possible
- Nitrogen propellants where it is not because this is the inert gas that makes up 78% of the earth's natural atmosphere
- Natural essential oils with insect repellent and acaricidal properties namely Eucalyptus EO and Peruvian balsam (Benzyl benzoate)
- Chemically friendly, gentle & non-abrasive skin cleansers and exfoliators that mimic the skins own essential oils namely Jojoba & Willow bark
- Natural antimicrobials & anti-inflammatories proven to eliminate common bacterial & fungal infections and to reduce inflammation namely the Leleshwa Essential oil & the Lichen Extract
- Pain relieving & mood enhancing essential oils – the Lichen Extract & the Leleshwa
- Anti-seborrhoeic oils namely Eucalyptus & Ylang ylang to reduce sebum production
- Wheatgerm & flax seed extracts rich in anti-oxidants that help to regulate cell proliferation and thus restore the skin to normal health
- Moisturisers that are rich in anti-oxidants & added vitamins A, B12 & E – wheatgerm oil, shea & cocoa butter, rosehip oil, aloe vera, glycerin, panthenol, tocopherols & Vit. A palmitate

Product packaging is recyclable hdPE or Polypropylene and not PVC or Polythene terephthalate (PET). Cans are tinplate rather than aluminium. Labels are UV treated to prevent degradation by sunlight. Glass would always be preferable but no insurance company nor retail chain would sanction toiletries in this material because of the risk of breakages and personal accident.

All the ingredients in our products are screened and most importantly, we constantly monitor new discoveries in this area. So many ingredients that have been regarded as "safe" historically have subsequently been discovered to have long term health implications and the definition of "safe" is likely to change significantly over the next generation as we become more and more aware of the dangers.

Most importantly, we guarantee you transparency and are always willing to learn from your experiences and act on them!