

# Smart Office Toolkit – Waste Cheat Sheet

## Waste management terms:

- **Recyclable:** When it is possible and practical to recycle a specific product.
- **Recycled content:** When a product is partially made out of recycled material, i.e. a portion of the content of the material has been recycled.
- **Landfill site:** When waste is not re-used, recycled or composted, it generally ends up in a landfill site (rubbish dump). The aim is to reduce the amount of waste sent to landfill sites.
- **Separation at source:** When waste is separated at the point where it is thrown away by providing different bins for different types of waste. This can involve:
  - A twin-bin system: when two bins are placed next to each other for recyclable (dry) and non-recyclable (wet) items.
  - A multi-bin system: when different bins are provided for different waste types, such as glass, plastic, tin, paper and non-recyclables.
- **Separation back-of-house:** When waste is not separated at source (where you throw the item into the bin), but the main recyclable items are removed from the waste stream for recycling on-site. This is a messy business and contamination (dirty items in between potential recyclable items) leads to a lower recovery rate when selling recyclable items, but can be avoided by providing separation at source.
- **Separation off-site:** When waste is neither separated at source nor on-site, but only once it reaches a material recovery facility (MRF). It usually has a low recovery rate due to contamination.
- **Composting:** When organic waste is processed aerobically (in the presence of oxygen), resulting in a soil conditioner that can be used as a valuable source of nutrients for plants. When organic material is processed anaerobically (in the absence of oxygen) methane gas (a powerful greenhouse gas) is produced as a by-product. This happens in landfill sites and thus results in the emission of greenhouse gases. It is better to encourage composting and avoid sending organic waste to landfill.
- **Cradle to cradle:** When a product (and all the packaging it requires) has a complete 'closed-loop' cycle, so that every component will either return to the natural ecosystem through biodegradation, or be recycled indefinitely. For more information, visit [www.thenextindustrialrevolution.org](http://www.thenextindustrialrevolution.org), which has some interesting business case studies.



## Plastic

Plastic is made from petroleum-based chemicals (oil, coal and gas) and there are many different types of plastic. Poly-logos (plastic identification logos) are placed on most products to assist with recycling, as it is important that similar plastics are recycled together. The poly-logo has a number in a triangle that identifies the specific plastic.

Manufacturers are encouraged to label their plastic products appropriately. The following table provides a summary of the main types of plastic, their uses and their applications.



Polymer	Poly-logo	Common uses	Common recycling applications
Polyethylene Terephthalate (PET)		Fizzy drink and water bottles, food trays, jars, cosmetics, salad dressing and bottled sauces	Fibre for stuffing, carpets, packaging
High Density Polyethylene (HDPE)		Milk bottles, bleach, cleaners, shampoo bottles, crates, motor oil containers, carrier bags, bin liners, frozen-vegetable bags, cosmetic tubes, packaging films	Bottles (non-food and food), boxes, crates, bins and underground pipes
Low Density Polyethylene (LDPE)			
Poly Vinyl Chloride (PVC)		Clear trays for food, blister packs, pipes, fittings, window and door frames (rigid PVC) thermal insulation (PVC foam), automotive parts, gutters and downpipes	Building products
Polypropylene (PP)		Bottle caps and closures, margarine tubs, microwaveable meal trays, hinged or pill containers, vehicle upholstery	Crates, boxes, chemical containers
Polystyrene (HIPS, EPS or PS)		Yoghurt pots, foam burger boxes and egg cartons, plastic cutlery, packaging for electronic goods and toys, insulation, DVD covers, toys, seedling trays	Loose fill packaging, stationery, garden furniture, building products
'Other', including biodegradable 'plastic'		This could refer to nylon and low-density polyethylene laminates. Vacuum packing for meat or cheese. ABS is used for computers. It also includes PLA	Generally not recycled, but PLA can be composted

## Paper and cardboard

Cardboard and paper are excellent materials for recycling. It takes 17 trees to make one ton of paper, and if paper is recycled, it takes 40% less energy and 30% less water compared to new paper. Recycled paper products are often used to make cardboard for cereal boxes or moulded paper products, such as egg boxes. If possible, one should do the following when recycling paper and cardboard:



- Flatten cardboard boxes to save space.
- Separate white office paper from magazines and newspapers.

The following paper products cannot be recycled:

- Wet or dirty paper, such as tissues, paper towel, food wrappings, paper with spills, paper plates and cups, as these items have been contaminated by their contents.
- Wax, plastic or foil-coated packaging, such as milk cartons, dog food bags and potato bags, because the raw materials and liners required to waterproof these and similar products are usually not recyclable.
- Carbon paper, stickers, self-adhesive paper.
- Chemically treated fax or photo paper.

The Paper Recycling Association of South Africa ([www.prasa.co.za](http://www.prasa.co.za)) can provide you with more specific details on paper recycling.

## Glass

Recycling a glass bottle saves enough electricity to light a 100W bulb for 4 hours. For every ton of glass recycled, 1.2 tons of raw materials and 114 litres of oil energy are saved.



The following glass products cannot be recycled, because they are either laminated or have different melting points, and therefore do not melt in the furnace. These should be placed in in a recycling bin for glass:

- Drinking glasses
- Cups, saucers and ceramic ware
- Sheet glass, such as windscreens and window panes
- Mirrors and reinforced glass
- Light bulbs and tubes, including fluorescent lights
- Car headlights
- Laboratory glass

Consol Glass ([www.consol.co.za](http://www.consol.co.za)) or the Glass Recycling Company can provide additional information ([www.theglassrecyclingcompany.co.za](http://www.theglassrecyclingcompany.co.za)).

## Tin cans

Recycling tins and cans saves about 95% of the energy needed to make a new can from raw materials. It does not matter if cans are crushed, rusted or burnt – they can all be recycled. Currently, 72% of used beverage cans in Southern Africa are recovered, which is very good in comparison to European standards.



Tips for the collection of cans:

- Rinse food tins to keep ants and rodents away
- Once clean, squash them if possible, to save space
- If you have large quantities, a compactor can be considered.

No pre-treatment is required for cans to be recycled. Scrap steel is an integral part of steel production and is melted to produce prime steel. Using scrap steel does not detrimentally affect the quality of the resultant product.

Aluminium is an integrated element in the steel making process and is used in the refining process to produce "clean" steel.

For more information and specific details on recycling of tin and aluminium cans refer to the Collect-a-Can website: [www.collectacan.co.za](http://www.collectacan.co.za)



## Tetra Pak

Tetra Pak, also known as Tetra Brick, refers to the cartons used to package many fruit juices and milk products. The Tetra Pak Company ([www.tetrapak.co.za](http://www.tetrapak.co.za)) encourages the recycling of their products although this is not yet practical in South Africa.

## Electronic waste (e-waste)

Electronic waste, or e-waste, is the umbrella term for cellphones, computers and 'white appliances' (refrigerators, irons and stoves). Many e-waste components are made of potentially hazardous materials, and should not be put into general waste bins or sent to landfill. Electronic products and appliances can be dismantled for valuable parts, which can be reused in other machines or recycled as valuable metal and materials.

E-waste recycling is a growing industry in South Africa, with the electrical and electronic industry as well as various recycling role players already involved. eWASA, the E-waste Association of South Africa ([www.e-waste.org.za](http://www.e-waste.org.za)), has been set up by the information technology industry to coordinate e-waste recycling.

## Biodegradable waste

Composting your organic waste (from the kitchen and garden) saves precious landfill space and reduces methane emissions, which contribute to climate change. It also allows for important nutrients to be recycled and put back into the ground. Vermiculture (worm farming) is a useful

alternative to composting, as it yields 'worm tea'-a great nutrient source which can be added to the soil to stimulate plant growth. Excess garden waste that cannot be used in your compost heap can be dropped off for chipping at the large community drop-off sites. Check if there is a local company that can collect your biodegradable waste for composting.

## **Hazardous waste**

Solid waste can be divided into two main categories: general waste and hazardous waste. General waste does not pose an immediate threat to people or the environment. Hazardous waste, on the other hand, is any waste that may cause or be likely to cause danger to health or to the environment, whether directly or when it comes into contact with other waste.

There is no completely safe way to dispose of hazardous household waste. The best you can do is to follow all safety precautions. Because of the cost and environmental risk associated with the disposal of hazardous waste, it is important to ask yourself if there is a safer or less toxic alternative when buying the item.

It should be noted that the following are seen as hazardous waste and should be treated with care:

- Compact fluorescent lights and fluorescent lights
- Electronic waste, such as batteries
- Irritants, such as ammonia and/or bleach
- Corrosive items, such as metal cleaners, drain and oven cleaners
- Toxic or poisonous items, such as pesticides
- Infectious items, such as sanitary towels or soiled nappies.
- Explosive or reactive items, such as aerosol tins or different cleaning products that come into contact with other chemicals. These can cause an explosion or release poisonous fumes when exposed to air, water or other chemicals