Dispose Your Fridge Responsibly

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Every year approximately 3 million fridges are disposed of in the UK (and a further 3 million bought). It's estimated that the average lifespan of a fridge is 11 years, however a substantial proportion remain in use for more than 20 years. Many of the substances contained in fridges are very harmful for the environment if disposed of incorrectly. This article explains a bit more about what those substances are, the legislation governing fridge disposal, and the various ways of how to dispose of a fridge responsibly.

What are the harmful substances in fridges?

Most fridges made before 2000 contain Chlorofluorocarbons ('CFCs') or Hydro chlorofluorocarbons ('HCFCs') in their insulation material and/or their refrigerant. CFCs and HCFCs are manmade compounds comprising carbon, fluorine, chlorine, and hydrogen. Non-toxic and non-flammable, they were used extensively in aerosols, refrigerators and solvents until it was discovered that the CFC molecules were being broken down by Ultra Violet (UV) radiation and releasing a chlorine atom that was reducing ozone in the atmosphere. Ozone depletion causes increased levels of harmful UV-B radiation to reach our planet. As a result, an international Treaty (the Montreal Protocol) was signed to phase out their production.

How can I tell if my fridge contains harmful substances?

If your fridge was made before 2000 it is highly likely that it contains Ozone Depleting Substances ('ODS') like CFCs or HCFCs in its insulating foam or refrigerant. Your fridge should be marked with a plate stating the manufacturer, model, serial number and what type of refrigerant has been used. The most common codes are:

Pre-1994

R11 = CFCs contained in insulation

R12 = CFCs used as a refrigerant

1994-2000

R22 / R141b / R142b = HCFCs contained in insulation

R134a = HFCs used as a refrigerant

What legislation is relevant to householders disposing of their old fridge?

There are 3 key pieces of legislation that cover fridge disposal:

1. Duty of Care - Waste (Household Waste) Duty of Care (England & Wales) Regulations 2005 - all householders getting rid of waste (not just old fridges!) have a duty of care to ensure that it is disposed of properly. In practice this means that you need either a) to take it to a licensed waste facility (e.g. local civic amenity site), or b) to ensure that any 3rd party you use to remove the waste is registered as a waste carrier with the Environment Agency and provides you with a appropriately completed Waste Transfer Note for the collection. Breach of your duty of care is a criminal offence and can also lead to civil liability if your waste ends up being disposed of incorrectly (e.g. fly-tipped).

2. Removal of ODS - EC regulation 2037/2000 - all refrigeration units containing Ozone Depleting Substances (i.e. CFCs and HCFCs) must have those ODS removed in a controlled manner before the appliance is scrapped. Failure to comply with these regulations carries a fine of up to Â£2,500 and eligibility for prosecution.

3. Recycling and Recovery - The Waste Electrical and Electronic Equipment regulations ('WEEE Regs') - place an obligation on manufacturers, retailers, distributors, local authorities, waste management companies, importers, exporters and business users to reuse, recycle and recover fridge units wherever possible.

What are my options for responsible disposal?

Here are the various ways that a householder can dispose of their old fridge responsibly:

Donate or Sell

First and foremost, if your old fridge is in working order, you could give it to a friend, neighbor or family member. There are also a number of websites dedicated to reusing working appliances such as free cycle. Some second hand dealers may be interested in your appliance if it's in good condition. You could also sell it yourself by placing an advert in the local paper, on a local website such as Gum tree or open up to a wider audience using eBay. There can be complications with these methods including difficulties arranging transportation for bulky items. It is also worth noting that the majority of fridges still contain substances that could be harmful if handled incorrectly.

Take to the Local Tip / Household Waste Recycling Centre (HWRC)

If you're feeling strong and have suitable transport (beware of the risk of chemical spillage!), you can take your old fridge to your local civic amenity site / HWRC for disposal free of charge. Make sure to check beforehand though whether your HWRC site accepts fridges because not all do.

Electrical Retailer's Service

If you've bought a new fridge, the retailer may offer a service to take the old one away when the new one is delivered. Expect to pay an additional Â£15-Â£30 for the service.

Local Authority Collection Service

As a resident, your local council is obliged to provide a collection service for your old fridge. The good news is that councils don't tend to charge too much to do this (e.g. London borough of Barnet charges Â£40) but the downside is that response times are typically quite slow (normally at least a week or two) and you will need to move the fridge outside yourself prior to collection.

Waste Removal Company

Alternatively you can contact a specialist waste removal company to remove your fridge. The advantage of using a specialist is that their response times should be much be faster than the council, they can collect from within the property, and obviously they'll do all the manhandling for you. You should expect to pay around Â£40-Â£50 + VAT for the service. Beware of anyone charging less than this because the actual costs to waste contractors of disposing of fridges are relatively high, so lower prices probably indicate improper disposal. In any event, to fulfill your Duty of Care remember to check they are properly licensed with the Environment Agency and to ask for a Waste Transfer Note detailing your collection and specifying the waste removed was a fridge.

What happens to a fridge when it's recycled?

Unless your fridge is passed on for reuse and assuming you use one of the responsible disposal

routes outlined above, your fridge will end up being transferred to a dedicated refrigeration recycling plant. Despite the harmful substances used in production, over 95% of an average refrigeration unit is recyclable, whether it contains CFCs/HCFCs or not. Fridges are deconstructed within a sealed environment so that any Ozone Depleting Substances can be safely removed. The remaining materials are separated mechanically into individual product streams including plastics, ferrous and non-ferrous metals and foam to be recycled or reused. Here is a more detailed summary of what occurs:

1. The compressor is separated from the fridge, oils and gases are removed under vacuum, and CFC gases are removed from the oil using ultrasonic - some compressors can be reused after this process

2. The fridges are shredded in an enclosed nitrogen atmosphere and CFC gases present in the insulating foam are released

3. The shredded contents are dried and the CFCs and nitrogen are captured and carried off for separating

4. Insulating foam powder is separated by a sieve and is collected for disposal

5. Ferrous metal is separated by an overhead magnet and non-ferrous metal is separated from the plastics for recycling

6. CFCs are separated from the nitrogen by cooling to -160 centigrade when the CFCs liquefy and can then be destroyed by high temperature incineration

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