

# H7 PRODUCTS CONTAINING REFRIGERANT GASES



Refrigerant gases contained in various chilling or coolant products may have a high ozone depletion potential (ODP) and/or high global warming potential (GWP). These gases include chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs) and hydrofluorocarbons (HFCs) which have been restricted in use since the Montreal Protocol and EC regulation 2037/2000 agreed to phase them out globally. Refrigerant gases may also arise as natural gases including Ammonia, CO<sub>2</sub> or Hydrocarbons, which are increasingly used in more recent equipment as non-HCFC replacements. All products containing refrigerant gases require de-gassing in a controlled environment before further treatment. Virgin, recycled or reclaimed HCFC (R22) is banned from commercial use (topping up or servicing of systems) from 1st January 2015 and will require appropriate disposal. All refrigerant gases are hazardous wastes (some mirror, others absolute) and need appropriate and specialist treatment and handling as defined by RAMS. For example Ammonia is mildly toxic, flammable, has a pungent odour, zero ODP and low GWP; CO<sub>2</sub> is non-flammable, toxic, an asphyxiant in high concentrations, odourless and colourless; and Hydrocarbons are flammable, non-toxic, have a zero ODP and low GWP.

Products Containing Refrigerant Gases  
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## WASTE STREAMS

### DISPOSAL

It is not possible to dispose refrigerant gases to landfill.

### RECOVERY

Refrigerant gases that are unable to be recycled or reclaimed should be

### RECYCLE

Products should only be recycled once refrigerant gases have been safely

### RECLAIM

Products should only be reclaimed once refrigerant gases have been safely

incinerated at an appropriate and licensed facility, preferably with energy recovery.

removed. Recycling of HCFC gases is banned from January 1st 2015. Recycling of non-HCFC gases should be undertaken by appropriately trained staff or contractors.

removed. Reclamation of HCFC gases is banned from January 1st 2015. Reclamation of non-HCFC gases should be undertaken by appropriately trained staff or contractors.

## USAGE & PROBABLE LOCATIONS

Refrigerant gases are used as chilling agents and coolants in a variety of products including air conditioning units, commercial refrigeration, domestic fridges and freezers, chilled storage units, refrigeration equipment, heat pumps, brewing equipment, compressors, aerosols, solvents, foam blowing agents, fire-fighting equipment, high voltage switchgear, industrial heat exchangers, chilled warehousing, shipping vessels and mobile air conditioning units. Products containing refrigerant gases can be found in domestic, commercial, public, retail and industrial buildings and plant rooms.

## PERSONAL PROTECTIVE EQUIPMENT

PPE requirements indicated are for guidance purposes only. DRIDS has identified the PPE that is mandatory on all demolition projects and ones that may be required subject to site specific Risk Assessment & Method Statement (RAMS).



The following types of PPE are non mandatory but should be considered if necessary to the specific task



## REMOVAL, SEGREGATION & STORAGE

Products containing refrigerant gases all need to be de-gassed before further treatment using the most appropriate process and contractor. This will be dependant on the nature of the gas and whether it is an ozone depleting substance (ODS), a fluorinated greenhouse gas (F-gas) or a natural gas. They should only be removed by appropriately trained staff or approved, specialist contractors. Ideally they should hold a City and Guilds Certificate 2078 in Refrigerant Handling or the Construction Industry Training Board (CITB) J01 equivalent, a City and Guilds 2079 Level 2 Award in F-gas Regulation or the CITB J11-J14 equivalent and hold a full or interim certificate from one of the organisations approved to register refrigerant handling companies. The contractor should also have a waste consignment premises code or if the site generates more than 500 kg, it will need to be registered as a hazardous waste producer.

## TOOLS

Specialist de-gassing equipment and containers, spanners, scaffold towers, power lifts, gas monitoring equipment, appropriate access and protective equipment, emergency shower facilities in case of uncontrolled release of certain gases e.g. ammonia.

## FIXTURES, FITTINGS & CONNECTIONS

Products, equipment and appliances containing refrigerant gases may be fixed in place with screws, nails, bolts, pins, hangers or racks. Some require no fixings, are free standing, have been placed within cavities or are manufactured within units, equipment or appliances.

## HEALTH & SAFETY

**Subject to task-specific Risk Assessment & Method Statement (RAMS).** Only handle wastes containing refrigerant gases if appropriately trained, or use specialist contractors. Wear appropriately assessed clothing, gloves, eye protection and respiratory protective equipment when handling wastes containing refrigerant gases to prevent inhalation, ingestion, burns, irritation and abrasion. Use eye protection when using hand tools. Emergency showers for one hour should be available when treating certain

gases e.g. ammonia. Use appropriate access and protective equipment determined by RAMS.

## **FURTHER READING**

Defra General Guidance on Ozone and F-Gas Regulations

Refcom Guidance for Contractors

NetRegs List of Guidance on Managing Ozone and F-Gas Refrigerants

Guardian R22 Phase Out 2015

## **TRAINING**

Working at Height

Manual Handling

Safe Use of Hand Tools

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