



Australian Government

Department of Sustainability, Environment,
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Fake, Phoney, Flammable, and Downright Dangerous Refrigerants - Be Aware

Concerns about counterfeit and impure refrigerant are growing worldwide. This year, small quantities of counterfeit refrigerant were discovered in Australia and New Zealand in one batch of newly manufactured equipment and some refrigerated shipping containers.

But what are counterfeit or fake refrigerants and why would anyone want to create them? Fake refrigerants are mixtures of chemicals made from cheap components that dishonest suppliers make up and sell to unsuspecting customers for high profit, particularly in developing countries where disposable cylinders are the main form of supply. Some are designed to mimic the properties of real refrigerants such as the R22/R142b/R40 mix that has properties similar to R134a on initial inspection. Good enough to pass a bench test - the refrigerant later corrodes the system internals and acidifies the oil.

The most dangerous counterfeit refrigerant contains methyl chloride, aka chloromethane or R40. This fake product is responsible for explosions that have caused the death and injury of technicians in Vietnam, China, Brazil and the USA. Methyl chloride reacts with aluminium components in the system to form harmful chemicals such as hydrogen fluoride, trimethylsilane and trimethylaluminium. These substances are toxic and trimethylsilane and trimethylaluminium may ignite on contact with air. The global refrigerated container industry has tracked all the suspect units and is undertaking appropriate remedial actions.

Detecting fake refrigerants can be difficult but not impossible. The pressure/temperature relationship can be used but if the fake product is designed to mimic the real thing, that test

may be inadequate. Refrigerant gas analysers can provide the answer despite many not being able to identify R40. If the analyser finds anything other than R134a then the system is contaminated in some way. The flame halide test can also be used to determine if any chlorine is present. If it is then the system is contaminated, as HFCs such as R134a are chlorine free.

However, testing should be conducted only by qualified and experienced people.

Technicians in Australia should be aware of the risks presented by counterfeit refrigerant and be very cautious when working on refrigerated shipping containers and newly bought and installed equipment containing R134a. Work should not commence until the refrigerant in the system has been successfully identified.

Fake refrigerant isn't the only new danger faced by technicians as the home-grown problem of impure, contaminated, and flammable mixtures becomes more prevalent. The increase in the cost of refrigerants makes the reuse of recovered refrigerant and the use of flammable substitutes very attractive from a commercial perspective. If it is suspected, or known that the refrigerant is counterfeit, seek advice and report information to the relevant authorities which may include work health and safety regulators. See the Safe Work Australia website to find contact details for your state or territory www.safeworkaustralia.gov.au.

*Article courtesy of Michael Bennett,
General Manager, Refrigerant Reclaim Australia*

Commencing 1 January 2013 - increase in application fees for refrigeration handling licences and trading authorisations

From 1 January 2013 application fees for refrigeration handling licences and trading authorisations will increase for the first time in eight years. The intention of the fee arrangements as stated in the legislation is that the licensing costs should cover the cost of administering the scheme.

Consultation on the fee increases commenced in 2009 through the Australian Refrigeration Council to their industry members. Respondents to the consultation process were generally supportive of the fee increases, recognising the need for financial sustainability to continue service provision by the refrigeration and air conditioning industry board.

The regulations (Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995) allowing the increase in application fees were amended and approved on 22 November 2012. The fee increases are necessary to meet the rising costs of administering the licensing scheme and are consistent with the Australian Government's principles for cost recovery adopted in 2002.

The rise on 1 January 2013 covers the increase in the cost of administering the scheme since its inception and establishes a basis for the indexation of fees in the future. The indexation of fees will apply annually from 1 January 2014 and will be based on the wage price index published by the Australian Bureau of Statistics (catalogue 6345.0). Please see back page for new fee table.

Over the holiday season the ARC head office will be open for business - only closing for public holidays.

In this issue

- ✓ Fake, Phoney, Flammable, and Downright Dangerous Refrigerants - Be Aware
- ✓ Commencing 1 January 2013 - increase in application fees for refrigeration handling licences and trading authorisations
- ✓ Impure refrigerant - the need to be cautious

- ✓ Industry leaders come together for 2012 ARC Members' Forum
- ✓ Compliance facts and figures
- ✓ Leak Detection - Saving your customers money and keeping you compliant
- ✓ Refrigeration = Greatest invention in history of food & drink
- ✓ RAC Industry recognised at Montreal Protocol 25th anniversary event



Impure refrigerant – the need to be cautious

While the reuse of recovered refrigerant of suitable purity should be encouraged, the use of impure and contaminated refrigerants results in systems operating inefficiently. This can cause excess power consumption and emissions, increased maintenance costs and ultimately, system failure. Good industry operators would never consider servicing equipment with impure refrigerant, but unfortunately there are some in the industry who will look to make a quick buck and leave the problems to the next technician.

Another cause for concern is the improper installation of flammable refrigerants into systems not originally designed for their use. In particular, the lack of accurate - or any - labelling creates severe risks for technicians. Far too often new labels are not fitted when refrigerant changes are made creating serious hazards for the next technician who comes along to work on the system. The automotive sector appears to be more vulnerable than others to incorrect or missing labels and

technicians should be appropriately cautious. Correct labelling is critical for the safety of technicians and if you are aware of anyone not properly labelling systems you should report them to ARC at www.arctick.org/breach_law. Refrigerant Reclaim Australia (RRA) exists to take back and destroy contaminated and unwanted refrigerants at end-of-life to prevent their emission to the atmosphere and consequent environmental damage. It makes

good economic sense for recovered refrigerant of appropriate quality to be reused rather than returned for destruction. But it is important to make sure the refrigerant you are using meets the relevant standard to ensure the proper and efficient working of the system, and the safety of personnel.

*Article courtesy of Michael Bennett,
General Manager, Refrigerant Reclaim Australia
www.refrigerantreclaim.com.au*

Industry leaders come together for 2012 ARC Members' Forum

The 2012 ARC Members' Forum was held in Canberra on the 12th September to coincide with the 25th anniversary of the Montreal Protocol - the catalyst for the RAC licence scheme and considered one of the international community's most significant environmental success stories.

This annual event gave RAC industry leaders the opportunity to speak on behalf of their members about issues directly and indirectly related to the ARC licence scheme.

Senior representatives from the Department of Sustainability, Environment, Water, Population and Communities and the ARC were there to listen to industry.

A comprehensive list of action items was compiled based on contributions from all attendees in the RAC and Auto segments, with the following topics highlighted:

- Increased focus of Auditing on split system installations and Auto A/C work.
- Better information for industry about prevalence of contaminated, counterfeit and impure refrigerant use.

- Communication of number of visits undertaken by the ARC Field Officers to suspected non-licensed persons/businesses.

The ARC would like to thank the following members and industry groups for attending:

- Appliance Industry Association (AIA)
- Air Conditioning and Mechanical Contractors Association (AMCA)
- Australian Motor Industry Federation (AMIF)
- Institute of Automotive Mechanical Engineers (IAME)
- Institute of Refrigeration and Air Conditioning Service Engineers (IRASE)
- National Electrical Contractors Association (NECA)

- Refrigeration and Air Conditioning Contractors Association (RACCA)
- Refrigerant Reclaim Australia (RRA)
- Vehicle Air Conditioning Specialists of Australia (VASA)





Compliance facts and figures

In the 2011/12 financial year, the ARC undertook 4,442 audits of businesses holding refrigerant trading authorisations. Of these, 3,580 were compliant. 862 were initially found to be non-compliant however, the ARC helped 345 of these businesses return to compliance through an effective and collaborative approach with the RTA holder.

90 non-compliant and serious breaches were referred to the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) for further follow up activities. With the prospect of enforcement action by DSEWPaC, most of these breaches were resolved co-operatively.

The remaining non-compliant cases were minor breaches and at the time of reporting were being managed through the compliance requirements by the ARC.

Continued non-compliance often results in authorisation re-applications being refused. This means the organisation cannot purchase or handle refrigerant until compliance is achieved, effectively putting them out of business. For example, in the months August to October 2012, 75 RTA re-applications were denied due to non-compliance.

Compliance checks on non-authorised businesses

As part of the ARC's national compliance activities, checks of non-authorised businesses are often conducted by ARC Field Officers.

Last financial year, there were 1,774 checks of non-authorised businesses suspected of carrying out RAC services.

These 'checks' take the form of physical site visits and are instigated through the ARC's own enquiries - and with a small amount through complaints reported to the ARC.

If you believe that an individual or business is operating illegally then you can report this to the ARC by lodging a complaint on-line: www.arctick.org/breach_law

The ARC's ability to follow up on complaints is improved by the quality of information provided.

The following pieces of information are vital for the ARC to begin the process:

- Name and contact details for person lodging complaint
 - > You can request that your details remain anonymous
- Name and/or business name plus some contact details for organisation/person committing breach
- Type of complaint
- Specific time, date and description of breach(es)
- Evidence of breach, e.g. a photo, advertisement, scan of relevant documents, written signed statement from person lodging complaint, etc.

Refrigeration = Greatest invention in history of food & drink

The Royal Society – UK's leading academy of science - has named refrigeration as the greatest invention in the history of food and drink. Beating the likes of pasteurised milk, tin cans and the oven, refrigeration came up trumps in the areas of accessibility, productivity, aesthetics and health, according to a panel of Royal Society fellows – including a Nobel Prize winner.

The September edition of Cool Change highlighted the important role science – along with the RAC community - has played in the recovery of the ozone layer. This latest RAC-related achievement once again demonstrates the world-changing results science and the RAC industry can achieve.

Leak Detection - Saving your customers money and keeping you compliant

Regular leak detection of gas cylinders has always been an important part of Authorisation (RTA) compliance. Making sure you check your refrigerant containers for any leaks at least once every 3 months helps to reduce the risk of harmful refrigerant emissions into the atmosphere.

Leak detection of air conditioning systems by technicians during service is also a mandatory part of both RAC and Auto Code of Practice manuals.

Regular leak detection not only benefits the environment, it also helps you and your customers save money.

With the equivalent carbon price increasing the costs of fluorocarbon refrigerants, a leaking gas cylinder will cost more to replace now compared to pre-July 2012.

As well, an air conditioning system that leaks refrigerant has to work harder, increasing energy and maintenance costs for the user.

For RTA holders, any refrigerant cylinders in your possession will need to have the following information detailed:

- Refrigerant type
- Cylinder serial number
- Cylinder test date
- Date of leak test

Ensuring refrigerant leak detection is part of your regular business practices will keep you and your customers from paying more than you need to.

RTA holders - visit the Audit section of the ARC website to read more.

RHL holders - visit ARC website to download Codes of Practice for RAC and Auto.

www.arctick.org

RAC Industry recognised at Montreal Protocol 25th anniversary event

On the occasion of the 25th anniversary of the signing of the Montreal Protocol on Substances that Deplete the Ozone Layer, the Australian Government recognised the significant efforts by several Australians for their sustained, long-term commitment to ozone layer protection, for contributing to national leadership on this issue and helping to create a lasting international legacy. Australia's approach has been based on a cooperative partnership between industry, community and all levels of government.

In mid-2012 the Department of Sustainability, Environment, Water, Population and Communities sought nominations for Australians prominent in the area of ozone protection and implementation of the Montreal Protocol to receive certificates recognising their leadership and contributions. Nominations were sought from relevant industry, scientific and technical organisations, both domestically and internationally.

Of the nominations received, seven individuals were recommended to receive certificates; two from industry, four from a science or technology background, and one ex-government official. The people who have been recognised have contributed most to Australia's phase-out of ozone depleting substances and to implementation of the Montreal Protocol more broadly.

Parliamentary Secretary for Sustainability and Urban Water, Senator the Hon Don Farrell, presented certificates to five of the recipients at an event at Parliament House on 13 September 2012. Two industry certificate recipients were:

- **Mr Steve Anderson** - For his leadership of Australian industry to phase-out the consumption of ozone depleting substances in advance of Montreal Protocol obligations, and for his initiative in establishing an Australian product stewardship scheme for refrigerants to reduce emissions.

- **Mr Michael Bennett** - For his leadership on, and management of, an Australian product stewardship scheme for refrigerants that has successfully destroyed thousands of tonnes of waste refrigerant, and for his support of research on emissions of ozone-depleting substances in Australia.

In addition to the certificate recipients, Senator Farrell made particular mention of a number individual Australians from the refrigeration and air conditioning, fire protection and aerosol industries for their outstanding contribution and efforts in the protection of the ozone layer, including:

- Mr Glenn Evans from the Australian Refrigeration Council
- Mr Scott Williams, Mr Barry Lee and Mr Carlos Santin from the fire protection industry
- Mr Mark Padwick, Andrew Ambrose, Ken Ball, Allan Woodhouse and John McCormack from the refrigeration and air conditioning sector, and
- Mr Philip Fleming from the Australian Aerosol Association of Australia, for his work which played an important early role in phasing out the use of CFCs in aerosols in the 1980s.



2013 Fee Table

The new fee list for January to December 2013 includes:

Permit Type	Previous application fee	Application fee from 1 January 2013
Refrigerant Handling Licence (2 years)	\$100	\$130
Transitional Refrigerant Handling Licence (1 year)	\$50	\$65
Trainee Refrigerant Handling Licence (1 year)	\$20	\$26
Refrigerant Trading Authorisation (2 years)	\$320	\$420
Refrigerant Trading Authorisation (1 year)	\$160	\$210
Restricted Refrigerant Trading Authorisation (2 years)	\$100	\$130

Further information on the new regulations will be available on the Australian Refrigeration Council website.

For more information on refrigeration application fees and trading authorisations, please contact ARC on 1300 88 44 83.



Have you changed address?

To help the ARC keep you up-to-date with all licence-related information, please visit the Online Application & Change of details section of www.arctick.org and update your details if you have changed address or phone/email.



Prefer email?

If you would prefer to receive CoolChange via email, please email your details to coolchange@arctick.org