

CHOOSE TO MAKE A DIFFERENCE.



WE DID AND HERE'S THE REASON WHY YOU SHOULD TOO.

Global warming is the increase in the earth's average temperature and day by day, the choices that we make may affect the release of greenhouse gases into the atmosphere. Recycling goods and conserving energy are among the measures that we can take to help reduce our carbon footprints.

Today, we present you with a new choice to make a difference, the all-natural hydrocarbon refrigerants which have been proven a good energy saver and environmentally safe for various applications. Unlike other commonly used refrigerants such as CFC, HFC and HCFC that are considered High Global Warming Potential (GWP), our refrigerants contain far lower levels, if none at all as clearly stated in the comparison chart below.

GLOBAL WARMING POTENTIAL

Source: IPCC and UNEP

Refrigerants	Ozone Depleting Properties	GWP Unit Co ₂ = 1	Atmosphere Lifespan
HFC R-404a	0	3,750	>30 yrs
HFC R-410a	0	1,750	>16 yrs
HFC R-134a	0	1,300	>12 yrs
HCFC R-22	0.05	1,700	>16 yrs
CFC R-12	1.0	10,720	>100 yrs
Hydrocarbon	0	3	<1 Month

Above clearly shows that Hydrocarbon Refrigerants are Environment and Eco-Friendly. THE INTELLIGENT CHOICE IS YOURS.



HCR 22 REPLACEMENT FOR HCFC R-22

Applicable Machines

Refrigerants for medium and Large air-conditioners, industrial refrigerators and commercial showcases.

Cylinder - 10kg, 500kg
Bulk - 7000kga

HCR 134 REPLACEMENT FOR CFC R-12 OR HFC R-134a

Applicable Machines

Refrigerants for automobile air conditioners, vending machines, small and medium sized room air-conditioners and water purifiers.

Can - 150g
Cylinder - 5kg, 10kg, 500kg
Bulk - 7000kga

Property	HCR 22	HCFC-22	HCR 134	CFC-12	HFC-134a
1. Molecular Mass	44.49	86.48	57.9	120.93	102.03
2. Boiling Temperature (°C)	-42.7	-40.76	-34.5	-29.8	-26.5
3. Heat of Vaporization at 0°C (kJ/kg)	324.95	234.12	367	149.8	149.8
4. Stabilities - Thermal	Stable	Stable	Stable	Stable	Stable
Stabilities - Chemical	Stable	Stable	Stable	Stable	Stable
5. Erosive	No	No	No	No	None
6. Flammability (LFF & UFL -%)	3.2 - 9.5	None	3.7 - 9.5	None	None
7. Auto Ignition Temperature (°C)	520	None	540	None	No
8. Toxicity	No	No	No	No	0
9. Ozone Depletion Properties (ODP)	0	0.055	0	1	0
10. Global Warming Potential	3 Max	1,500	3 max	10,720	1,300
11. Lubricant	Mineral/Ester	Mineral	Mineral/Ester	Mineral	Ester

OUR PRODUCTS are Hydrocarbon Refrigerants and classified as Natural Refrigerants which are processed from natural occurring gases and cause no damage to the environment. The other advantages are:-

1. ENERGY EFFICIENT

Increased in efficiency of equipment, less usage of energy which result in energy savings between 10% to 30%

2. NO CHEMICAL REACTION

Does not become caustic when exposed to heat and moisture. No acidic reactions.

3. ECONOMICAL

Does not require expensive retro-fittings to machinery as our products are " drop-in" solutions.

4. ENVIRONMENTAL FRIENDLY

Does not affect the Ozone Layer and negligible contribution to global warming with zero Value of Ozone Depletion Substance and Value of Global Warming Potential that is equal to 3.

5. MEETS INTERNATIONAL STANDARDS

ISO 5149, EN 378, AS/NZS 1677 - 1998 & BS 4434-1995. Our products are clearly the best alternative to replace CFC, HCFC and HFC refrigerants.

6. NON-TOXIC AND NON-CORROSIVE

As it is Non-Corrosive, it actually expands the lifespan of the air-cond unit and less maintenance is required which in turn saves on maintenance costs.



HCR 502 REPLACEMENT FOR HCFC R-22 AND R-502a

Applicable Machines
Refrigerants for ultimately low temperature, cold storages & warehouses, refrigerator trucks and commercial showcases.

Cylinder - 10kg, 500kg
Bulk - 7000kga

HCR 600a HIGH PURITY ISOBUTANE 99.5%, 99.9%, 99.9%

Applicable Machines
Refrigerants for small and medium air conditioners and refrigerators. Propellant for medicines, cosmetics, perfumes, sprays, cleaners and others.

Can - 150g
Cylinder - 10kg, 500kg
Bulk - 7000kga

Property	HCR 502	HCFC-22	HFC-502a	HCR 600a	HCFC-22
1. Molecular Mass	43.6	86.48	111.63	58.12	86.48
2. Boiling Temperature (°C)	-45.02	-40.76	-45.3	-11.76	-40.76
3. Heat of Vaporization at 0°C (kj/kg)	371.14	234.12	147.03	355.7	234.12
4. Stabilities - Thermal	Stable	Stable	Stable	Stable	Stable
Stabilities - Chemical	Stable	Stable	Stable	Stable	Stable
5. Erosive	No	No	No	No	No
6. Flammability (LFF & UFL -%)	3.2 - 9.5	None	None	1.8 - 8.4	None
7. Auto Ignition Temperature (°C)	520	None	None	462	None
8. Toxicity	No	No	No	No	No
9. Ozone Depletion Properties (ODP)	0	0.055	0	0	0.055
10. Global Warming Potential	3 max	1,500	6,200	3 Max	1,500
11. Lubricant	Mineral/Ester	Mineral	Mineral	Mineral/Ester	Mineral