

## R22 Phase Out

In October 2000, EC Regulation no. 2037/2000 was brought into force as the last step in eliminating ozone-depleting substances (ODSs) as per the Montreal Protocol.

Based on the agreements taken during the 19th Montreal Protocol meeting in September 2007, the phase out of the R22 was accelerated. The regulation stipulates that the use and sale of virgin hydro chlorofluorocarbons (HCFC's) will be banned according to following calendar:

For USA	2010 for new equipments 2020 for existent equipments
For Europe	2010 for new and existing equipments
For Countries referred at Montreal Protocol Article 5	Progressive reduction till 2040

### R22 REPLACEMENT ALTERNATIVES

#### 1. Drop-in refrigerants:

During last years it has been developed several refrigerant blends (HFC) as an easy alternative to the HCFC's (including R22). These drop-in gases can work with Mineral or Synthetic Oils allowing the use in existing equipments. The most known alternatives to the current R22 Cubigel Compressors' range are:

R417A	<ul style="list-style-type: none"> <li>• For AC and HMBP appliances. Lower working pressures and lower cooling capacity.</li> <li>• In certain circumstances better COP.</li> <li>• Can be added to current R22 systems without previous cleaning.</li> </ul>
R422A	<ul style="list-style-type: none"> <li>• For LBP and MBP appliances.</li> <li>• In certain circumstances better cooling capacity and COP.</li> <li>• Can be added to current R22 systems without previous cleaning.</li> </ul>

#### NOTE:

1. To reach equivalent system performances, the main refrigeration system elements have to be reviewed: heat exchangers, expansion systems,...
2. Cubigel Compressors has not approved all the drop-in gases then, we do not guarantee the reliability and performances of such drop in gases charged in our compressors (See point 2).

#### 2. Alternative Cubigel Compressors existing compressors:

Cubigel Compressors already offers in its catalogue a complete alternative compressors range:

- HFC: R404A for LBP and HMBP applications and R407C for AC.
- HC: R290 for LBP and HMBP applications.

They perfectly cover the existing R22 models for all voltages and applications moreover, with higher efficiency levels if required.

## FROM R22 TO R404A AND R290

HMHP 50Hz														
R22	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN	R404A	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN	R290	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN
<b>220-240V 50Hz</b>														
L40TNa	458	1,68	RSIR	F	ML40TB	473	1,43	CSIR	F	NL45TB	473	1,88	CSIR	F
L40TNb	458	1,68	CSIR	F	ML40TB	473	1,43	CSIR	F	NL45TB	473	1,88	CSIR	F
L45TN	497	1,68	CSIR	F	ML45TB	528	1,49	CSIR	F	NL45TB	473	1,88	CSIR	F
L57TNa	612	1,72	RSIR	F	ML60TB	647	1,53	CSIR	F	NL60TBa	606	2,05	RSIR	F
L57TNb	612	1,72	CSIR	F	ML60TB	647	1,53	CSIR	F	NL60TBb	606	2,05	CSIR	F
L76TN	816	1,72	CSIR	F	ML80TB	880	1,63	CSIR	F	NL80TB	806	2,05	CSIR	F
L88TN	975	1,74	CSIR	F	ML90TB	1055	1,63	CSIR	F	NL90TB	921	2,08	CSIR	F
P12TN	1312	2	CSR	F	MP12RB	1463	1,89	CSR	F	NP12TB	1272	2,34	CSR	F
S22TN	2460	2,28	CSR	F	MX21TB	2425	1,77	CSR	F	*NX21TB				
S26TN	3027	2,2	CSR	F	MS26TB	3185	2,02	CSR	F	N/A				
<b>220-230V 50/60Hz</b>														
L40TN	458	1,7	CSIR	F	ML40TG	473	1,43	CSIR	F	N/A				
L45TN	516	1,72	CSIR	F	ML45TG	528	1,49	CSIR	F	N/A				
L57TN	626	1,76	CSIR	F	ML60TG	647	1,53	CSIR	F	N/A				
L76TN	833	1,8	CSIR	F	ML80TG	880	1,63	CSIR	F	N/A				
L88TN	975	1,75	CSIR	F	ML90TG	1055	1,63	CSIR	F	N/A				

HMHP 60Hz														
R22	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN	R404A	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN	R290	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN
<b>230V</b>														
P12TN	1575	1,95	CSR	F	MP12TG	1713	1,81	CSR	F	N/A				
S26TN	3633	2,12	CSR	F	MS26TG	3729	1,96	CSR	F	N/A				
<b>115-127V</b>														
L76TN	1000	1,79	CSIR	F	N/A					N/A				
L88TN	1170	1,69	CSIR	F	MLY80RDAa	1232	1,77	CSIR	F	N/A				
<b>115V</b>														
P12TN	1575	1,94	CSR	F	N/A					N/A				

\* Under development

HBP 50Hz														
R22	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN	R404A	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN	R290	Performance CECOMAF (W)	COP CECOMAF (W/W)	MOTOR	FAN
<b>200-220/230V 50/60Hz</b>														
X16TN	451785	2,04	CSR	F	MX18TG	2094	1,76	CSR	Fan	N/A				
X18TN	2079	2,11	CSR	F	MX18TG	2094	1,76	CSR	Fan	N/A				

Cubigel also can offer a complete high efficiency range in R404A and R290. This information available in our home page: [www.cubigel.com](http://www.cubigel.com)