

New Refrigerant **R32** for Single Split Air Conditioners

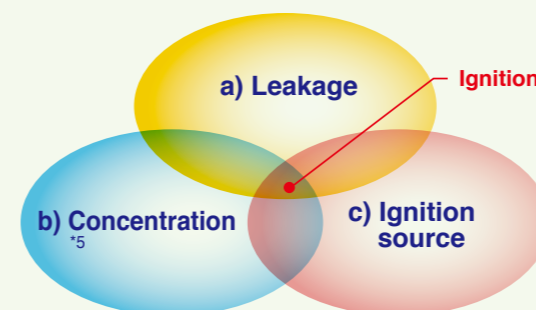
# Summary of "Installation Service Manual for New Refrigerant System"

·For details, confirm the "Installation Service Manual for New Refrigerant System".  
 ·Refer to each product's installation manual and service manual in addition to this summary.  
 ·In case there are regulations of each country, you need to comply with the requirements in addition to this summary.

## 1. Safety Handling for R32

### 1) R32 Refrigerant Properties

Under the conditions shown below, there is a possibility that R32 could burn.



	R32	R410A	R22
Chemical formula	CH <sub>2</sub> F <sub>2</sub>	CH <sub>2</sub> F <sub>2</sub> /CHF <sub>2</sub> CF <sub>3</sub>	CHClF <sub>2</sub>
Composition (blend ratio wt. %)	Single composition	R32/R125 (50/50 wt %)	Single composition
Ozone depletion potential (ODP)	0	0	0.055
Global warming potential (GWP) *1	675	2088	1810
LFL(vol.%) *2	13.3	-	-
UFL(vol.%) *3	29.3	-	-
Flammability *4	Lower flammability (2L)	No flame propagation (1)	No flame propagation (1)

\*1 IPCC 4th assessment report.  
 \*2 LFL : Lower flammable limit  
 \*3 UFL : Upper flammable limit  
 \*4 ISO 817:2014  
 \*5 R32 consistency is higher than LFL<sup>1</sup> and lower than UFL<sup>2</sup>.

### 2) Installation and Servicing Notice

Although R32 is classified into lower flammability, ignition conditions can be removed by following three points.

#### a) Do not leak refrigerant.

<Installation> ·Vacuum drying should be done. Air purge is prohibited.  
 ·Follow "4.Installation Points of Refrigerant Piping Work".  
 <Repair/Relocation/Removal> ·Pump down or recovering refrigerant should be done.

#### b) Prevent concentration.

·Ventilate during installation and servicing, such as open the door or window and use a fan.  
 ·Follow "2.Installation Restrictions".

#### c) Keep ignition source away from the unit.

·Do not braze pipe and unit which contain refrigerant. Before brazing, refrigerant should be recovered.  
 ·Do not install unit during turning on electricity. Turn off electricity and check by tester.  
 ·Do not smoke during work and transportation.

**Note** Both R32 / R410A emit a toxic gas when naked flame is contacted to them.

## 3.Tools

Tools	Gauge manifold	Charge hose	Electronic weight scales	Charge valve	Electric leak tester (Gas leak detector)	Vacuum pump	Vacuum pump adapter	Refrigerant recovery equipment	Refrigerant recovery cylinder
R32	Shareable	Shareable	Shareable	Shareable	Shareable	Shareable	Shareable	Shareable	Exclusive
R410A	Shareable	Shareable	Shareable	Shareable	Shareable	Shareable	Shareable	Shareable	Exclusive

**Note** Be sure to confirm with manufacturers that the electric leak tester, vacuum pump and refrigerant recovery equipment are compliant with R32.

## 4.Installation Points of Refrigerant Piping Work

Before work	Work
Confirmation of refrigerant type	Confirmation of installation restrictions
Pre-work preparations	Refrigerant piping connection work
	Air-tightness test*
	Vacuuming
	Additional refrigerant charging
	Gas leak inspection

Confirm the spec label.

Use piping with specifications stipulated in the installation manual.

Be sure to follow "2.Installation Restrictions".

Be sure to tighten the flare joints with the torque stipulated in the installation manual.

Use nitrogen gas, increase the pressure up to the design pressure and perform a 24-hour air-tightness test.

Be sure to perform vacuuming procedure stipulated in the installation manual. Air purge is prohibited.

Use a gauge manifold, charge hose and charge valve compliant with R32.

Use the leak tester compliant with R32.

\*Only for PAC.