

Isceon® MO 49 Plus (R-437A)

The refrigerant suitable for any sector

R-437A, also known as commercial trademark Isceon® MO 49 Plus, has been created as a refrigerant suitable for converting systems already working with R-12. It is used in air conditioning in motor vehicles and in fixed industrial and commercial refrigerating systems. It is also used to substitute refrigerating mixtures containing HCFC in the refrigerating systems.

We recommend not to use R-437A in refrigerating plants with liquid separator or plants with centrifugal compressor.



Physical Properties	UM	Isceon® MO49 Plus R-437A
Composition	% by weight	R-125 - 19,5 % R-134a - 78,5 % R-600 - 1,4 % R601 - 0,6 %
Environmental Classification	-	HFO
Molecular Weight	gr/grmole	103,71
Saturated Vapour Temperature @ 1,013 bar	°C	-27,77
Temperature Glide @ 1,013 bar	K	4,20
Density of Liquid @ 25°C	kg/m³	1.177,70
Density of Saturated Vapour @ 1,013 bar	kg/m³	5,45
Pressure of Saturation (Saturated Liquid) @ 25°C	bar_rel	6,93
Pressure of Saturation (Saturated Liquid) @ 50°C	bar_rel	14,25
Critical Temperature	°C	96,26
Critical Pressure	bar_rel	40,86
Critical Density	kg/m³	-
Heat of Evaporation @ 1,013 bar	kJ/Kg	212,95
Specific Entropy of Liquid @ 25°C	kJ/Kg*°C	1,16
Specific Entropy of Vapour @ 25°C	kJ/Kg*°C	1,73
CP/CV Ratio @ 25°C - 1,013 bar_ass		1,15
ODP	(R11 = 1)	0,00
Atmospheric Life Time	Years	16,88
GWP - IPCC rev. 4 (IPCC rev. 5)	(CO ₂ = 1)	1.805 (1.639)
ASHRAE Standard 34 Safety Rating		A1
Lower Flammability Limit	%	Non Flammable
Classification according to Directive 97/23/CE PED	Group	2

Packaging

Item Code	Gas Q.ty Kg	Container	Capacity Lt	Pressure	Valve	Sales Unit	N° Pieces per Pack	N° Cylinders per Pallets	GWP per Pack (TonCO ₂ eq.)
F-GF-R437A-FU	936	Roll Drum	920	36÷48 bar	W 21,7 x 1/14"	KG	1	N/A	1.534,10
F-GF-R437A-40	40	Cylinder	40	36÷48 bar	W 21,7 x 1/14"	KG	1	9	65,56
F-GF-R437A-13	12	Cylinder	13	36÷48 bar	W 21,7 x 1/14"	KG	1	30	19,67
F-GF-MI-R437A-1LT	0,9	KryoSmart	1	48 bar	1/4" SAE Flare / 7/16" 20-UNF	Pkg.	12	360 (30 Pkg.)	17,70

Applications

R-437A is used in refrigerating systems designed for R-12, as for example: air conditioning systems for motor vehicle, restoration systems, supermarket refrigerating stands, domestic freezers and refrigerators.

Performance

- ✓ R-437A refrigerant does not damage the ozone layer, and it allows the use of already existing plants.
- ✓ R-437A has a cooling capacity that is 10% higher compared to the R-12 cooling capacity, and a lower discharge temperature.

Recommended Lubricants

R-437A is compatible with mineral oil in motor vehicle air conditioning. As far as R-12 refrigerating and air conditioning systems are concerned, R-437A is compatible with traditional and newly formulated lubricants. Most of the times changing the kind of lubricant is not necessary during retrofitting.

Domestic
Refrigeration

Mobile AC

Applications



GWP



ODP



Tpos

Temperature

Thermodynamic Properties of Isceon® MO49 Plus

LEGEND

Low GWP

Medium GWP

High GWP

Zero ODP

Low ODP

Medium ODP



Tpos

MT

BT

BBT

Temperature	Vapour Pressure		Density		Enthalpy		Entropy	
	Saturated Liquid	Saturated Vapour	Saturated Liquid	Saturated Vapour	Saturated Liquid	Saturated Vapour	Saturated Liquid	Saturated Vapour
°C	bar _{rel}	bar _{rel}	kg/m ³	kg/m ³	KJ/kg	KJ/kg	KJ/kg·K	KJ/kg·K
-50	-0,59	-0,69	1423,90	1,84	135,76	357,10	0,784	1,786
-48	-0,55	-0,65	1418,10	2,05	138,25	358,38	0,795	1,783
-46	-0,49	-0,61	1412,30	2,28	140,74	359,67	0,806	1,779
-44	-0,44	-0,56	1406,40	2,53	143,25	360,95	0,817	1,776
-42	-0,38	-0,51	1400,60	2,80	145,75	362,23	0,828	1,774
-40	-0,31	-0,45	1394,70	3,09	148,27	363,51	0,839	1,771
-38	-0,24	-0,39	1388,80	3,41	150,79	364,79	0,850	1,768
-36	-0,16	-0,32	1382,80	3,75	153,32	366,06	0,860	1,766
-34	-0,08	-0,25	1376,80	4,12	155,85	367,34	0,871	1,763
-32	0,01	-0,17	1370,80	4,51	158,39	368,61	0,882	1,761
-30	0,11	-0,09	1364,80	4,94	160,94	369,88	0,892	1,759
-28	0,22	0,00	1358,70	5,39	163,50	371,14	0,903	1,757
-26	0,33	0,10	1352,60	5,88	166,06	372,41	0,913	1,755
-24	0,45	0,21	1346,40	6,41	168,63	373,66	0,923	1,753
-22	0,57	0,32	1340,20	6,97	171,21	374,92	0,934	1,751
-20	0,71	0,44	1334,00	7,57	173,80	376,16	0,944	1,750
-18	0,85	0,57	1327,70	8,20	176,40	377,41	0,954	1,748
-16	1,01	0,71	1321,40	8,88	179,01	378,64	0,964	1,747
-14	1,17	0,86	1315,00	9,61	181,62	379,87	0,974	1,745
-12	1,35	1,01	1308,60	10,38	184,25	381,10	0,984	1,744
-10	1,53	1,18	1302,10	11,20	186,88	382,32	0,994	1,742
-8	1,73	1,36	1295,60	12,06	189,53	383,53	1,004	1,741
-6	1,93	1,55	1289,00	12,99	192,18	384,73	1,014	1,740
-4	2,15	1,75	1282,40	13,96	194,85	385,93	1,024	1,739
-2	2,38	1,96	1275,70	14,99	197,53	387,11	1,034	1,738
0	2,63	2,18	1268,90	16,09	200,22	388,29	1,044	1,737
2	2,88	2,42	1262,10	17,24	202,92	389,46	1,053	1,736
4	3,15	2,67	1255,20	18,47	205,63	390,62	1,063	1,735
6	3,44	2,94	1248,20	19,76	208,35	391,76	1,073	1,734
8	3,74	3,22	1241,20	21,12	211,09	392,90	1,083	1,734
10	4,05	3,51	1234,00	22,56	213,84	394,03	1,092	1,733
12	4,38	3,82	1226,80	24,08	216,60	395,14	1,102	1,732
14	4,72	4,14	1219,50	25,67	219,38	396,24	1,111	1,731
16	5,08	4,48	1212,20	27,36	222,17	397,33	1,121	1,731
18	5,46	4,84	1204,70	29,14	224,97	398,40	1,131	1,730
20	5,86	5,22	1197,10	31,01	227,79	399,46	1,140	1,729
22	6,27	5,61	1189,50	32,98	230,63	400,50	1,150	1,729
24	6,70	6,02	1181,70	35,05	233,48	401,53	1,159	1,728
26	7,15	6,45	1173,80	37,24	236,35	402,54	1,169	1,727
28	7,63	6,90	1165,80	39,54	239,24	403,53	1,178	1,727
30	8,12	7,37	1157,60	41,96	242,15	404,50	1,188	1,726
32	8,63	7,86	1149,40	44,51	245,07	405,45	1,197	1,726
34	9,16	8,37	1140,90	47,19	248,02	406,38	1,207	1,725
36	9,71	8,91	1132,40	50,02	250,98	407,29	1,216	1,724
38	10,29	9,47	1123,70	53,00	253,97	408,17	1,226	1,724
40	10,89	10,05	1114,80	56,14	256,98	409,03	1,235	1,723
42	11,51	10,65	1105,70	59,44	260,02	409,85	1,245	1,722
44	12,16	11,28	1096,50	62,93	263,07	410,65	1,254	1,722
46	12,83	11,93	1087,00	66,61	266,16	411,42	1,264	1,721
48	13,53	12,61	1077,40	70,49	269,27	412,16	1,273	1,720
50	14,25	13,32	1067,50	74,60	272,41	412,86	1,283	1,719
52	15,00	14,05	1057,40	78,94	275,58	413,52	1,292	1,718
54	15,77	14,81	1047,00	83,53	278,79	414,14	1,302	1,717
56	16,58	15,60	1036,30	88,39	282,03	414,72	1,311	1,716
58	17,41	16,42	1025,30	93,55	285,30	415,25	1,321	1,715
60	18,27	17,27	1014,00	99,04	288,62	415,73	1,331	1,714
62	19,16	18,16	1002,30	104,88	291,98	416,15	1,341	1,713
64	20,08	19,07	990,21	111,10	295,39	416,51	1,350	1,711
66	21,04	20,02	977,67	117,75	298,84	416,81	1,360	1,710
68	22,02	21,00	964,64	124,88	302,36	417,02	1,370	1,708
70	23,04	22,02	951,06	132,54	305,93	417,16	1,381	1,706

