

Article No.
96-17-10

**AIR CONDITIONING—USE OF R-12 REFRIGERANT
SUBSTITUTES—SERVICE TIP**

FORD: 1980-93 CROWN VICTORIA
1981-93 ESCORT
1982-83 FAIRMONT
1982-88 EXP
1982-93 MUSTANG, THUNDERBIRD
1983-86 LTD
1984-94 TEMPO
1986-93 TAURUS
1988-93 FESTIVA
1989-93 PROBE

LINCOLN-MERCURY: 1980-93 GRAND MARQUIS, TOWN CAR
1981-87 LYNX
1982-83 LN7, ZEPHYR
1982-86 CAPRI
1982-93 COUGAR
1982-94 CONTINENTAL
1983-86 MARQUIS
1984-92 MARK VII
1984-94 TOPAZ
1986-93 SABLE
1991-93 CAPRI, TRACER

MERKUR: 1985-89 XR4TI
1988-90 SCORPIO

LIGHT TRUCK: 1980-93 BRONCO, ECONOLINE, F SUPER DUTY, F-150-350 SERIES
1983-93 RANGER
1984-90 BRONCO II
1986-93 AEROSTAR
1988-93 F-47
1991-93 EXPLORER
1993 VILLAGER

MEDIUM/HEAVY TRUCK: 1985-94 CARGO SERIES, F & B SERIES, L SERIES

This TSB article is being republished in its entirety to list Environmental Protection Agency (EPA) reviewed A/C substitutes for R-12 refrigerant.

ISSUE: A number of manufacturers are producing refrigerant products which are described as being direct replacements for refrigerant R-12.

ACTION: If service is required, use only new or of known quality recycled refrigerant R-12. Ford Motor Company has approved R-134a as the only refrigerant substitute for R-12.

**CAUTION: USING ANY UNAUTHORIZED
SUBSTITUTE REFRIGERANT FOR
R-12 MAY RESULT IN SEVERE
DAMAGE TO THE A/C SYSTEM
COMPONENTS.**

INFORMATION FROM THE EPA

This information has been taken from EPA documents to address Ford specific applications and recommendations. Further EPA information on ozone-depleting substances and regulations regarding its handling can be found on the Internet at World Wide Web site: <http://www.epa.gov/ozone/>

In 1994, EPA established the Significant New Alternatives Policy (SNAP) program to review alternatives to ozone-depleting substances like R-12. EPA examines new substitutes for their ozone depleting, global warming, flammability, and toxicity characteristics. The SNAP process does not test these substitutes for A/C system compatibility, reliability, durability, or performance.

Under the SNAP rule, each new refrigerant must be used in accordance with the following conditions:

1. Unique Fittings - Each new refrigerant must be used with a unique set of fittings to prevent the accidental mixing of different refrigerants.
2. Unique Equipment - Each refrigerant must have dedicated recovery/recycling equipment for that refrigerant.
3. Labels - Whether a vehicle is originally designed to use a new refrigerant or is retrofitted, the technician must apply a detailed label giving specific information about the alternative. This label covers up information about the old refrigerant and provides valuable details on the alternative and how it was used. The technician is required to fill in their name, company performing the retrofit, address and the date retrofitted.
4. Remove Original Refrigerant - The original R-12 must be removed from the system prior to charging with the new refrigerant. This will guarantee that the largest amount of clean R-12 is available for use in vehicles that still need it.

A summary of the refrigerants reviewed under EPA's SNAP program for use in motor vehicle air conditioning systems is in the following table.

**Article No.
96-17-10
Cont'd.**

**AIR CONDITIONING—USE OF R-12 REFRIGERANT
SUBSTITUTES—SERVICE TIP**

Brand Name (1)	Ford Approved	Status (2)	Date	Components Percentage							
				HCFC 22	HCFC 124	HCFC 142b	HFC 134a	HFC 152a	Propane (R-290)	Butane (R-600)	Iso-butane (R-600a)
HFC-134a	Yes	ASU	3/18/94				100%				
R-401C	No	ASU	3/18/94	33%	52%			15%			
FRIGC FR-12	No	ASU	6/13/95		39%		59%			2%	
Freezone (3)	No	ASU	5/22/96			19%	70%				
R-406A / GHG / McCool (4)	No	P	5/22/96	55%		41%					4%
GHG-X4 / Autofrost / Chill-It (4)	No	P	5/22/96	51%	28.5%	16.5%					4%
Hot Shot / Kar Kool (4)	No	P	5/22/96	50%	39%	9.5%					1.5%
GHG-HP (4)	No	P	5/22/96	65%		31%					4%
FREEZ-12	No	Under Review				20%	80%				

Brand Name (1)	Ford Approved	Status (2)	Date	Reason Unacceptable
				HCFC 22, HCFC 124, HCFC 142b, HFC 134a, HFC 152a, Propane (R-290), Butane (R-600), Iso-butane (R-600a)
Ikon-12	No	ASU	5/22/96	Composition claimed as confidential business information
OZ-12	No	UNA	3/18/94	Flammable blend of hydrocarbons; insufficient data to demonstrate safety
R-176	No	UNA	3/18/94	Contains CFC-12, which is inappropriate in a CFC-12 substitute
HC-12a	No	UNA	6/13/95	Flammable blend of hydrocarbons; insufficient data to demonstrate safety
R-405A	No	UNA	6/13/95	Contains a perfluorocarbon, which has extremely high global warming potential and lifetime

**AIR CONDITIONING—USE OF R-12 REFRIGERANT
SUBSTITUTES—SERVICE TIP**

**Article No.
96-17-10
Cont'd.**

(1) R-401A (made by DuPont), R-401B (DuPont), R-409A (Elf Atochem), Care 30 (Calor Gas), Adak-29/Adak-12 (TACIP International) and ES-12R (Intervest) have not been submitted for review in motor vehicle air conditioning, and it is therefore illegal to use them in such systems.

(2) See article for details on legality of use according to **Status**:

- **ASU** = acceptable subject to fittings, labeling, and no drop-in use conditions
- **P** = proposed acceptable subject to use conditions; open to public comment so decision is not final
- **UNA** = unacceptable; illegal for use as CFC-12 substitutes in motor vehicle air conditioners

(3) Freezone contains 2% of a lubricant

(4) Additional use condition: **MUST BE USED WITH BARRIER HOSES**

OTHER APPLICABLE ARTICLES: 91-9-7, 96-15-7

SUPERSEDES: 93-23-11

WARRANTY STATUS: INFORMATION ONLY

OASIS CODES: 208000, 208999, 290000