In addition to direct global warming effects, EPA considers indirect impacts associated with changes in energy efficiency. Many manufacturers, including that of R-403B, claim energy efficiency gains associated with their products. Such gains are highly dependent on equipment type, ambient conditions, optimization of the system, and other factors. No data demonstrate, however, that R-403B would produce such large indirect benefits as to overcome the direct impact of its use as compared to the use of other already acceptable substitutes. Thus, EPA performed no detailed analysis of the indirect global warming impacts of R-

As discussed in the SNAP FRM, the Agency is authorized to grandfather existing uses from a prohibition where appropriate under the four-part test established in Sierra Club v. EPA, 719 F.2d 436 (D.C. Cir. 1983). As requested by two commenters, the Agency has conducted the four analyses required under this test, and has concluded that the balance of equities favors the grandfathering of two current uses of R-403B. Within industrial process refrigeration, use of R-403B is permitted until supplies purchased prior to September 26, 1994, the date EPA proposed to list R-403B as unacceptable, are exhausted. Within refrigerated transport, R-403B may be used in systems converted to its use as of September 26, 1994 for the lifetime of that particular equipment. No use outside these two specific cases is

Under the first prong of the Sierra Club analysis, the prohibition set forth in this action clearly represents a departure from previously established practice, as use of this substitute was not previously restricted. However, through the proposed action on September 26, 1994 EPA provided notice that it was considering a change to this previous practice. Therefore, existing users of R-403B who, prior to September 26, 1994, switched from class I substances and invested in this substitute on the assumption that it would be a sufficient improvement over the class I used, relied on the fact that use of R-403B was unrestricted. Prohibiting their use of the substitute immediately would impose a severe economic burden on these users. Although there is a substantial interest in applying this requirement immediately, this interest is balanced by the fact that the restriction will apply immediately to new equipment using R-403B. Therefore, the requirement will apply immediately to a substantial number of systems and there will be no

incentive for future investment in R–403B equipment. These factors taken together outweigh any statutory interest in applying the new rule immediately to existing users who had invested in R–403 prior to September 26, 1994.

(2) R-405A. R-405A, which is composed of HCFC-22, HFC-152a, HCFC-142b, and R-c318, is unacceptable as a substitute for CFC-12, R-500, and R-502 in the following new and retrofitted end-uses:

- Commercial comfort air conditioning;
 - Industrial process refrigeration;
 - Ice skating rinks;
 - Cold storage warehouses;
 - Refrigerated transport;
 - Retail food refrigeration;
 - Vending machines;
 - · Water coolers;
 - Commercial ice machines;
 - Household refrigerators;
 - Household freezers;
 - Residential dehumidifiers; and
 - · Motor vehicle air conditioning.

R-405A was listed as HCFC/HFC/fluoroalkane Blend A in previous notices. R-405A contains a high proportion of R-c318, cycloperfluorobutane, which has an extremely high GWP and lifetime. In particular, the lifetime of R-c318 is over 3000 years, which means that global warming effects would be essentially irreversible. While other substitutes may have high GWPs, they do not exhibit such long lifetimes.

In addition to direct global warming effects, EPA considers indirect impacts associated with changes in energy efficiency. Many refrigerant manufacturers claim energy efficiency gains associated with their products. Such gains are highly dependent on equipment type, ambient conditions, optimization of the system, and other factors. No data demonstrate, however, that R-405A would produce such large indirect benefits as to overcome the direct impact of its use as compared to the use of other already acceptable substitutes. Thus, EPA performed no detailed analysis of the indirect global warming impacts of R-405A.

- (3) Hydrocarbon Blend B.— Hydrocarbon Blend B is unacceptable as a substitute for CFC-12 in the following new and retrofitted end-uses:
- Commercial comfort air conditioning;
 - Ice skating rinks;
 - Cold storage warehouses;
 - Refrigerated transport;
 - Retail food refrigeration;
 - Vending machines;
 - · Water coolers;
 - Commercial ice machines;

- Household refrigerators;
- Household freezers;
- · Residential dehumidifiers; and
- Motor vehicle air conditioning.

Flammability is the primary concern. Use of this substitute in very leaky enduses like motor vehicle air conditioning may pose a high risk of fire. EPA requires that a risk assessment be conducted to demonstrate this blend may be safely used in any CFC-12 enduses. The manufacturer of this blend has not submitted such a risk assessment, and EPA therefore finds it unacceptable.

(4) Flammable Substitutes.—
Flammable substitutes, defined as
having flammability limits as measured
according to ASTM E-681 with
modifications included in Society of
Automotive Engineers Recommended
Practice J1657, including blends which
become flammable during fractionation,
are unacceptable as substitutes for CFC12 in retrofitted motor vehicle air
conditioning systems.

Flammable refrigerants differ from traditional substances in several ways: Potential gains in energy efficiency, reductions in direct contribution to global warming, and additional risks from fire. Flammable refrigerants may be good substitutes in systems designed with fire risks in mind. In addition, in certain circumstances, they may serve well as substitutes in retrofit uses. EPA encourages research into the use of flammable refrigerants, but remains concerned about the dangers. Because of these concerns, EPA has established the requirement that manufacturers of flammable refrigerants conduct detailed risk assessments in all end-uses. The risks from flammability are extremely sensitive to the end-use and charge size.

In motor vehicle air conditioning systems (MVACS), flammable refrigerants pose risks not found in stationary equipment, including the potential for explosions in collisions, potential punctures of the condenser because of its placement directly behind the grille, potential punctures of flexible hoses, the hazard to technicians who are not expecting to handle flammable fluids, the danger to passengers from evaporator leaks, and the dangers to personnel involved in disposal of old automobiles. Due to the length of SNAP review, certain substitutes have been marketed which may pose risk to users. The intent of the 90-day review process was not to allow manufacturers to market risky substitutes, but rather to ensure a thorough review. Because of potential risks to users and service personnel, EPA finds it necessary to find all flammable substitutes unacceptable in retrofitted automotive air conditioning to prevent hazardous