

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 82**

[EPA-HQ-OAR-2003-0118; FRL-8050-9]

RIN 2060-AG12

**Protection of Stratospheric Ozone: Notice 20 for Significant New Alternatives Policy Program****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Notice of acceptability.

**SUMMARY:** This Notice of Acceptability expands the list of acceptable substitutes for ozone-depleting substances (ODS) under the U.S. Environmental Protection Agency's (EPA) Significant New Alternatives Policy (SNAP) program. The substitutes are for use in the following sectors: refrigeration and air conditioning, foam blowing, and fire suppression and explosion protection. The determinations concern new substitutes.

**DATES:** This notice of acceptability is effective on March 29, 2006.

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2003-0118 (continuation of Air Docket A-91-42). All electronic documents in the docket are listed in the index at <http://www.regulations.gov>. Although listed in the index, some information is not publicly available, i.e., CBI or other information whose disclosure is restricted by statute. Publicly available docket materials are available either electronically at [www.regulations.gov](http://www.regulations.gov) or in hard copy at the EPA Air Docket (No. A-91-42), EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** Evelyn Swain by telephone at (202) 343-9956, by facsimile at (202) 343-2342, by e-mail at [swain.evelyn@epa.gov](mailto:swain.evelyn@epa.gov), or by mail at U.S. Environmental Protection Agency, Mail Code 6205J, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. Overnight or courier deliveries should be sent to the office location at 1310 L Street, NW., 8th floor, Washington, DC 20005.

For more information on the Agency's process for administering the SNAP program or criteria for evaluation of substitutes, refer to the original SNAP

rulemaking published in the **Federal Register** on March 18, 1994 (59 FR 13044). Notices and rulemakings under the SNAP program, as well as other EPA publications on protection of stratospheric ozone, are available at EPA's Ozone Depletion World Wide Web site at <http://www.epa.gov/ozone/> including the SNAP portion at <http://www.epa.gov/ozone/snap/>.

**SUPPLEMENTARY INFORMATION:**

- I. Listing of New Acceptable Substitutes
    - A. Refrigeration and Air Conditioning
    - B. Foam Blowing
    - C. Fire Suppression and Explosion Protection
  - II. Section 612 Program
    - A. Statutory Requirements
    - B. Regulatory History
- Appendix A—Summary of Decisions for New Acceptable Substitutes

**I. Listing of New Acceptable Substitutes**

This section presents EPA's most recent acceptable listing decisions for substitutes in the following industrial sectors: refrigeration and air conditioning, foam blowing, and fire suppression and explosion protection. For copies of the full list of ODS substitutes in all industrial sectors, visit EPA's Ozone Depletion Web site at <http://www.epa.gov/ozone/snap/lists/index.html>.

The sections below discuss each substitute listing in detail. Appendix A contains a table summarizing today's listing decisions for new substitutes. The statements in the "Further Information" column in the table provide additional information, but are not legally binding under section 612 of the Clean Air Act. In addition, the "further information" may not be a comprehensive list of other legal obligations you may need to meet when using the substitute. Although you are not required to follow recommendations in the "further information" column of the table to use a substitute, EPA strongly encourages you to apply the information when using these substitutes. In many instances, the information simply refers to standard operating practices in existing industry and/or building-code standards. Thus, many of these statements, if adopted, would not require significant changes to existing operating practices.

Submissions to EPA for the use of the substitutes listed in this document may be found under category VI-D of EPA air docket A-91-42 at the address described above under **ADDRESSES**. You can find other materials supporting the decisions in this action under category IX-B of EPA docket A-91-42 and in e-docket EPA-HQ-OAR-2003-0118 at <http://www.regulations.gov>.

*A. Refrigeration and Air Conditioning*

## 1. ICOR AT-22

*EPA's decision:* ICOR AT-22 [R-125/290/134a/600a (55.0/1.0/42.5/1.5)] is acceptable for use in new and retrofit equipment as a substitute for HCFC-22 in:

- Chillers (centrifugal, screw, reciprocating)
- Industrial process refrigeration
- Industrial process air conditioning
- Retail food refrigeration
- Cold storage warehouses
- Refrigerated transport
- Commercial ice machines
- Ice skating rinks
- Household refrigerators and freezers
- Vending machines
- Water coolers
- Residential dehumidifiers
- Non-mechanical heat transfer
- Household and light commercial air conditioning and heat pumps
- Very low temperature refrigeration

ICOR AT-22 is a blend of 55.0% by weight HFC-125 (pentafluoroethane, Chemical Abstracts Service Registry Number (CAS) ID #354-33-6), 1.0% by weight R-290 (propane, CAS ID #74-98-6), 42.5% by weight HFC-134a (1,1,1,2-tetrafluoroethane, CAS ID #811-97-2), and 1.5% by weight isobutane (2-methyl propane, CAS ID #75-28-5). You may find the submission under EPA Air Docket A-91-42, item VI-D-310.

*Environmental information:* The ozone depletion potential (ODP) of ICOR AT-22 is zero. The global warming potentials (GWPs) of HFC-125 and HFC-134a are 3450 and 1320, respectively (relative to carbon dioxide, using a 100-year time horizon (United Nations Environment Programme (UNEP)) and World Meteorological Organization (WMO) Scientific Assessment of Ozone Depletion: 2002). The atmospheric lifetimes of these constituents are 29 and 14 years, respectively.

HFC-125 and HFC-134a are excluded from the definition of volatile organic compound (VOC) under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of State implementation plans (SIPs) to attain and maintain the national ambient air quality standards.

EPA is concerned with the relatively high GWP of this substitute. The contribution of this blend to greenhouse gas emissions will be minimized through the implementation of the venting prohibition under section 608 (c)(2) of the Clean Air Act (see 40 CFR, part 82, subpart F). This section and EPA's implementing regulations

prohibit venting or release of substitutes for class I or class II ozone ODSs used in refrigeration and air conditioning and require proper handling, such as recycling or recovery, and disposal of these substances.

**Flammability information:** While two of the blend components, isobutane and propane, are flammable, the blend as formulated and under worst case fractionated formulation scenarios is not flammable.

**Toxicity and exposure data:** HFC-125 and HFC-134a have 8 hour/day, 40 hour/week workplace environmental exposure limits (WEELs) of 1000 ppm established by the American Industrial Hygiene Association (AIHA). Isobutane and propane have an 8 hour/day, 40 hour/week threshold limit value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) of 1000 ppm and 2500 ppm, respectively. EPA recommends that users follow all requirements and recommendations specified in the Material Safety Data Sheet (MSDS) for the blend and the individual components and other safety precautions common in the refrigeration and air conditioning industry. EPA also recommends that users of ICOR AT-22 adhere to the AIHA's WEELs and the ACGIH's TLV.

**Comparison to other refrigerants:** ICOR AT-22 is not an ozone depleter; thus, it poses a lower risk for ozone depletion than HCFC-22, the ozone-depleting substance (ODS) it replaces. ICOR AT-22 has a GWP of about 2500, slightly higher than other substitutes for HCFC-22. For example, the GWP of R-407C is about 1700 and the GWP of R-410A is about 2000. Flammability and toxicity risks are low, as discussed above. Thus, we find that ICOR AT-22 is acceptable because it does not pose a greater overall risk to public health and the environment in the end uses and applications listed above.

## 2. ICOR XLT1 (R-422C)

**EPA's decision:** ICOR XLT1 [R-125/134a/600a (82/15/3)] is acceptable for use in new and retrofit equipment as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A in:

- Chillers (centrifugal, screw, reciprocating)
- Industrial process refrigeration
- Industrial process air conditioning
- Retail food refrigeration
- Cold storage warehouses
- Refrigerated transport
- Commercial ice machines
- Ice skating rinks
- Household refrigerators and freezers
- Vending machines
- Water coolers

- Residential dehumidifiers
- Non-mechanical heat transfer
- Household and light commercial air conditioning and heat pumps
- Very low temperature refrigeration

ICOR XLT1 is a blend of 82% by weight HFC-125 (pentafluoroethane, CAS ID # 354-33-6), 15% by weight HFC-134a (1,1,1,2-tetrafluoroethane, CAS ID #811-97-2), and 3% by weight isobutane (2-methyl propane, CAS ID #75-28-5). The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 34 has designated this blend as R-422C. You may find the submission under EPA Air Docket A-91-42, item VI-D-313.

**Environmental information:** The ODP of ICOR XLT1 is zero. For environmental information on the components of this blend see the section on environmental information above for ICOR AT-22.

HFC-125 and HFC-134a are excluded from the definition of volatile organic compound (VOC) under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of State implementation plans (SIPs) to attain and maintain the national ambient air quality standards.

EPA is concerned with the relatively high GWP of this substitute. The contribution of this blend to greenhouse gas emissions will be minimized through the implementation of the venting prohibition under section 608 (c)(2) of the Clean Air Act (see 40 CFR, part 82, subpart F). This section and EPA's implementing regulations prohibit venting or release of substitutes for class I or class II ozone ODSs used in refrigeration and air conditioning and require proper handling, such as recycling or recovery, and disposal of these substances.

**Flammability information:** While one component of the blend, isobutane, is flammable, the blend as formulated and under worst case fractionated formulation scenarios is not flammable.

**Toxicity and exposure data:** For information on the workplace exposure limits for the components of this blend see the section toxicity and exposure data above for ICOR AT-22. EPA recommends that users follow all requirements and recommendations specified in the Material Safety Data Sheet (MSDS) for the blend and the individual components and other safety precautions common in the refrigeration and air conditioning industry. EPA also recommends that users of ICOR XLT1 adhere to the AIHA's WEELs and the ACGIH's TLV.

**Comparison to other refrigerants:** ICOR-XLT1 is not an ozone depleter;

thus, it poses a lower risk for ozone depletion than the ODSs it replaces. ICOR XLT1 has a GWP of about 3000, comparable to other substitutes for the ODSs listed above. For example, the GWP of R-407C is about 1700, the GWP of R-410A is about 2000, and the GWP of R-404A and R-507 are about 3900. Flammability and toxicity risks are low, as discussed above. Thus, we find that ICOR XLT1 is acceptable because there are no other substitutes that are currently or potentially available and that provide a substantially reduced risk to public health and the environment in the end uses listed.

## 3. ICOR XAC1 (R-422B)

**EPA's decision:** ICOR XAC1 [R-125/134a/600a (55/42/3)] is acceptable for use in new and retrofit equipment as a substitute for HCFC-22 in:

- Chillers (centrifugal, screw, reciprocating)
- Industrial process refrigeration
- Industrial process air conditioning
- Retail food refrigeration
- Cold storage warehouses
- Refrigerated transport
- Commercial ice machines
- Ice skating rinks
- Household refrigerators and freezers
- Vending machines
- Water coolers
- Residential dehumidifiers
- Non-mechanical heat transfer
- Household and light commercial air conditioning and heat pumps
- Very low temperature refrigeration
- Motor vehicle air conditioning (buses and passenger trains only)

ICOR XAC1 is a blend of 55% by weight HFC-125 (pentafluoroethane, CAS ID # 354-33-6), 42% by weight HFC-134a (1,1,1,2-tetrafluoroethane, CAS ID #811-97-2), and 3% by weight isobutane (2-methyl propane, CAS ID #75-28-5). ASHRAE Standard 34 has designated this blend as R-422B. You may find the submission under EPA Air Docket A-91-42, item VI-D-312.

**Environmental information:** The ODP of ICOR XAC1 is zero. For environmental information on the components of this blend see the section on environmental information above for ICOR AT-22.

HFC-125 and HFC-134a are excluded from the definition of volatile organic compound (VOC) under Clean Air Act (see 40 CFR 51.100(s)) regulations addressing the development of State implementation plans (SIPs) to attain and maintain the national ambient air quality standards.

EPA is concerned with the relatively high GWP of this substitute. The contribution of this blend to greenhouse

gas emissions will be minimized through the implementation of the venting prohibition under section 608 (c)(2) of the Clean Air Act (see 40 CFR, part 82, subpart F). This section and EPA's implementing regulations prohibit venting or release of substitutes for class I or class II ODSs used in refrigeration and air conditioning and require proper handling, such as recycling or recovery, and disposal of these substances.

**Flammability information:** While one component of the blend, isobutane, is flammable, the blend as formulated and under worst case fractionated formulation scenarios is not flammable.

**Toxicity and exposure data:** For information on the workplace exposure limits for the components of this blend see the section toxicity and exposure data above for ICOR AT-22. EPA recommends that users follow all recommendations specified in the Material Safety Data Sheet (MSDS) for the blend and the individual components and other safety precautions common in the refrigeration and air conditioning industry. EPA also recommends that users of ICOR XAC1 adhere to the AIHA's WEELs and the ACGIH's TLV.

**Comparison to other refrigerants:** ICOR XAC1 is not an ozone depleter; thus, it poses a lower risk for ozone depletion than HCFC-22, the ODS it replaces. ICOR XAC1 has a GWP of about 2500, slightly higher than other substitutes for HCFC-22. For example, the GWP of R-407C is about 1700 and the GWP of R-410A is about 2000. Flammability and toxicity risks are low, as discussed above. Thus, we find that ICOR XAC1 is acceptable because it does not pose a greater overall risk to public health and the environment in the end uses listed.

#### 4. R-417A

**EPA's decision:** R-417A [R-125/134a/600 (46.6/50.0/3.4)] is acceptable for use in new and retrofit equipment as a substitute for R-22 in:

- Motor vehicle air conditioning (busses and passenger trains only)

R-417A is a blend of 46.6 percent HFC-125 (pentafluoroethane, CAS ID #354-33-6), 50.0 percent HFC-134a (1,1,1,2-tetrafluoroethane, CAS ID #811-97-2), and 3.4 percent n-butane (CAS ID #106-97-8). You can find the most recent submission in EPA Air Docket A-91-42, item VI-D-286.

In SNAP Notice of Acceptability #16 (March 22, 2002; 67 FR 13272), EPA noted that the composition of NU-22 was changed to match that of ISCEON 59, also known as R-417A, and that

EPA previously found ISCEON 59 acceptable as a substitute for R-22 in a number of end uses in SNAP Notice of Acceptability #11 (December 6, 1999; 64 FR 68039). R-417A is sold under the trade names NU-22 and ISCEON 59. In SNAP Notice of Acceptability #17 (December 20, 2002; 67 FR 77927), EPA found R-417A acceptable as a substitute for R-502 in several end uses. Today's decision adds this refrigerant to the acceptable list for HCFC-22 in bus and passenger train motor vehicle air conditioners.

**Environmental information:** For environmental information on HFC-125 and HFC-134a, see above in section I.A.1. for ICOR AT-22. The ozone depletion potential (ODP) of R-417A is zero. The GWP of butane is less than 10 (relative to carbon dioxide, using a 100-year time horizon). Butane is a VOC under Clean Air Act regulations (see 40 CFR 51.100(s)) concerning the development of SIPs.

**Flammability information:** While butane, one component of the blend, is flammable, the blend is not flammable.

**Toxicity and exposure data:** HFC-125 and HFC-134a have guidance level WEELs of 1000 ppm established by the AIHA. Butane has a threshold limit value (TLV) of 800 ppm established by the American Conference of Government Industrial Hygienists (ACGIH). EPA recommends that users follow all recommendations specified in the Material Safety Data Sheet (MSDS) for the blend and the individual components and other safety precautions common in the refrigeration and air conditioning industry. EPA also recommends that users of R-417A will adhere to the AIHA's WEELs and the ACGIH's TLVs.

**Comparison to other refrigerants:** R-417A is not an ozone depleter; thus, it reduces risk from ozone depletion compared to R-22, the ODS it replaces. R-417A has a comparable or lower GWP than the other substitutes for R-22. Flammability and toxicity risks are low, as discussed above. Thus, we find that R-417A is acceptable because it does not pose a greater overall risk to public health and the environment in the end uses listed.

#### 5. HFC-245fa (Genetron® 245fa)

**EPA's decision:** HFC-245fa [Genetron® 245fa] is acceptable for use in new and retrofit equipment as a substitute for CFC-11, CFC-113, CFC-114, HCFC-21, HCFC-123, and HCFC-141b in:

- Low pressure centrifugal chillers
- Non-mechanical heat transfer
- Very low temperature refrigeration
- Industrial process air conditioning
- And industrial process refrigeration

Refer to the table in *Appendix A* for specific information as to which ODS HFC-245fa substitutes for in each end use. HFC-245fa is sold under the trade name of Genetron® 245fa. HFC-245fa is also known as 1,1,1,3,3-pentafluoropropane, Chemical Abstracts Service Registry Number (CAS ID #) 460-73-1. You may find the submission under EPA Air Docket A-91-42, item VI-D-316.

**Environmental information:** ODP of HFC-245fa is zero. The GWP of HFC-245fa is 950. The atmospheric lifetime of HFC-245fa is 7.2 years.

HFC-245fa is excluded from the definition of a VOC under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the national ambient air quality standards.

**Flammability information:** HFC-245fa is nonflammable.

**Toxicity and exposure data:** EPA recommends that users follow all requirements and recommendations specified in the Material Safety Data Sheet (MSDS) for the blend and the individual components and other safety precautions common in the refrigeration and air conditioning industry. EPA also recommends that users of HFC-245fa adhere to the AIHA's WEEL of 300 ppm (time weighted average for 8 hour/day, 40 hour/week).

**Comparison to other refrigerants:** HFC-245fa is not an ozone depleter; thus, it poses a lower risk for ozone depletion than the ODSs it replaces. HFC-245fa has a lower GWP than the CFC refrigerants it replaces. HFC-245fa is non-flammable. HFC-245fa exhibits moderate to low toxicity and guidance is available from the AIHA and the ACGIH on its use in the workplace. Thus, we find that HFC-245fa is acceptable because it does not pose a greater overall risk to public health and the environment in the end uses listed.

#### 6. R-420A

**EPA's decision:** R-420A is acceptable for use, subject to use conditions, in retrofit equipment as a substitute for CFC-12 in motor vehicle air conditioning.

R-420A is a blend of 88% by weight HFC-134a (1,1,1,2-tetrafluoroethane, CAS ID #811-97-2), and 12% by weight HCFC-142b (1-chloro-1,1-difluoroethane, CAS ID #75-68-3). Note that HCFC-142b is an ozone-depleting substance (ODS). Regulations regarding recycling and prohibiting venting issued under section 609 of the Clean Air Act apply to this blend. A common trade name for this refrigerant blend is Choice refrigerant. You may find the submission under EPA Air Docket A-

91–42, item VI–D–302 (or see e-docket EPA–HQ–OAR–2003–0118). R–420A was previously approved as a substitute refrigerant in other refrigeration and air conditioning end-uses in SNAP Notice 19 (69 FR 58905, October 4, 2004).

*Conditions for use in motor vehicle air conditioning systems:* On October 16, 1996 (61 FR 54029), EPA promulgated a final rule that prospectively applied certain conditions on the use of any refrigerant used as a substitute for CFC–

12 in motor vehicle air conditioning systems (Appendix D of subpart G of 40 CFR part 82). That rule provided that EPA would list new refrigerants in future notices of acceptability. Therefore, the use of R–420A as a CFC–12 substitute in motor vehicle air conditioning systems must follow the standard conditions imposed on previous refrigerants, including:

- The use of unique fittings designed by the refrigerant manufacturer,

- The application of a detailed label,
- The removal of the original refrigerant prior to charging with R–420A, and
- The installation of a high-pressure compressor cutoff switch on systems equipped with pressure relief devices.

The October 16, 1996 rule gives full details on these use conditions.

You must use the following fittings to use R–420A in motor vehicle air conditioning systems:

Fitting type	Diameter (inches)	Thread pitch (threads/inch)	Thread direction
Low-side service port .....	.5625 (9/16)	18	Left.
High-side service port .....	.5625 (9/16)	18	Right.
Large containers (>20 lb.) .....	.5625 (9/16)	18	Left.
Small Cans .....	.5625 (9/16)	18	Right.

The labels will have a dark green background (PMS #347) and white text.

*Environmental information:* The ODP of HCFC–142b is 0.065 and HFC–134a has an ODP of zero. The GWPs of HCFC–142b and HFC–134a are 2400 and 1320, respectively. The atmospheric lifetimes of these constituents are 17.9 and 14.0 years, respectively.

Because R–420A contains an ODS, regulations on its use apply, including the requirements for technician certification, mandatory recovery of refrigerant during service of equipment containing R–420A, a requirement that sales of the refrigerants be made only to EPA-certified technicians, and the statutory prohibition under section 608(c) of the Clean Air Act against knowingly venting refrigerants. Production and/or import of HCFC–142b is currently restricted to persons holding production and/or consumption allowances under 40 CFR part 82 subpart A. Hence, manufacturers and importers of R–420A may have difficulty obtaining adequate supply of the HCFC–142b component necessary to formulate the blend. HCFC–142b will be subject to further control beginning in 2010 when the next major milestone in the HCFC phaseout occurs and supplies may be further limited. As of January 1, 2010, production and import of HCFC–22 or HCFC–142b will be limited to the purposes of use in equipment manufactured before January 1, 2010, transformation or destruction of the HCFC, or for export in accordance with 40 CFR Part 82 Subpart A. Thus, blends containing HCFC–142b such as R–420A are only transitional substitutes. EPA has proposed a rule prohibiting the use of HCFC–142b and HCFC–22 as ODS substitutes for foam blowing (70 FR 67120), and is considering similar

action restricting HCFC–142b and HCFC–22 in other industrial sectors.

HCFC–142b and HFC–134a are excluded from the definition of VOC under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of SIPs to attain and maintain the national ambient air quality standards.

*Flammability information:* Although the component HCFC–142b is moderately flammable, the blend is not flammable as formulated or under worst-case fractionated formulation scenarios.

*Toxicity and exposure data:* HCFC–142b and HFC–134a have 8 hour/day, 40 hour/week WEELs of 1000 ppm established by the AIHA. EPA recommends that users follow all recommendations specified in the MSDS for the blend and the individual components and other safety precautions common in the refrigeration and air conditioning industry. EPA also recommends that users of R–420A adhere to the AIHA’s WEELs.

*Comparison to other refrigerants:* R–420A has a lower ODP than that of the Class I ODS it replaces, CFC–12, and lower than that of other blends containing Class II ODS in this end use. R–420A has a comparable GWP to that of most other substitutes for CFC–12. Flammability and toxicity risks are low, as discussed above. Thus, we find that R–420A is acceptable as a substitute for CFC–12 in the end use listed.

Although this substitute has an ozone depleting potential, the contribution of this blend to ozone depletion will be minimized through the implementation of the venting prohibition under section 608 (c) of the Clean Air Act (see 40 CFR, part 82, subpart F). This section and EPA’s implementing regulations prohibit venting or release of substitutes

for class I or class II ozone ODS used in refrigeration and air conditioning and require proper handling, such as recycling or recovery, and disposal of these substances.

*B. Foam Blowing*

1. Transcend™ Technologies

*EPA’s decision:* Transcend(™) Technologies is acceptable, as an additive to other SNAP-approved foam blowing agents, in blends making up to 5% by weight of the total foam formulation, as a substitute for CFCs and HCFCs in the following end-uses:

- Rigid polyurethane and polyisocyanurate laminated boardstock;
- Rigid polyurethane appliance;
- Rigid polyurethane, spray, commercial refrigeration, and sandwich
- Rigid polyurethane slabstock and other foams;
- Polyurethane integral skin foam;
- Polyurethane: extruded sheet

For the spray foam application within the rigid polyurethane, spray, commercial refrigeration, and sandwich end use, Transcend™ Technologies may only be used with other blowing agents that are SNAP-approved specifically for spray foam. It is not acceptable to use Transcend™ Technologies for saturated light hydrocarbons or for other blowing agents that are not SNAP-approved specifically for use in spray foam. The blowing agent blended with Transcend™ Technologies must be SNAP-approved for that specific end use.

The submitter, Arkema Inc, claims that the composition of Transcend™ Technologies is confidential business information (see docket A–91–42, item VI–D–311).

*Environmental information:*

Transcend™ Technologies has no ODP and very low or zero GWP. Users should be aware that Transcend™ Technologies is considered a VOC under Clean Air Act regulations (see 40 CFR 51.100(s)) addressing the development of State implementation plans (SIPs) to attain and maintain the national ambient air quality standards. For more information refer to the manufacturer of Transcend™ Technologies, EPA regulations at 40 CFR part 51, and your state or local air quality agency.

*Flammability information:*

Transcend™ Technologies is flammable and should be handled with proper precautions. Use of Transcend™ Technologies will require safe handling and shipping as prescribed by OSHA and DOT (for example, using personal safety equipment and following requirements for shipping hazardous materials at 49 CFR parts 170 through 173). However, when blended with fire retardant and/or other SNAP-approved alternatives, the flammability of Transcend™ Technologies can be reduced to make a formulation that is either combustible or non-flammable (contact the manufacturer of Transcend™ Technologies for more information). For example, in blowing-agent blends of 50% Transcend™ Technologies and 50% HFC-134a, or in blends of less than 97% Transcend™ Technologies and 3% or more HFC-245fa, the resultant formulation is nonflammable.

For information on the safety training requirements for use of flammable blowing agents in spray foam, refer to SNAP Notice of Acceptability 11 (64 FR 68039, December 6, 1999) or contact the EPA SNAP program.

*Toxicity and exposure data:*

Transcend™ Technologies should be handled with proper precautions. EPA recommends that users follow all recommendations specified in the MSDS for Transcend™ Technologies. OSHA has established a permissible exposure limit for the main component of Transcend™ Technologies of 200 ppm for a time-weighted average over an eight-hour work shift.

*Comparison to other foam blowing agents:* Transcend™ Technologies is not an ozone depleter; thus, it reduces risk overall compared to the ODSs it replaces. Transcend™ Technologies has a comparable or lower GWP than the other substitutes for CFCs and HCFCs in these end uses. Thus, we find that Transcend™ Technologies is acceptable because it reduces overall risk to public health and the environment in the end uses listed.

*C. Fire Suppression and Explosion Protection*

## 1. Uni-light Advanced Fire Fighting Foam 1% (Uni-light AFFF 1%)

*EPA's decision:* Uni-light AFFF 1% is acceptable for use as a substitute for halon 1301 in the total flooding end use in both normally occupied and unoccupied spaces.

Uni-light AFFF 1% is a water mist system with 1 percent (by mass) foam enhancement mixed with water. It is intended for use in machinery spaces onboard ships and off-shore installations. You may find the submission under Docket A-91-42, item VI-D-315 (or see e-docket EPA-HQ-OAR-2003-0118-116).

EPA previously found water mist systems with potable water or natural sea water acceptable in total flooding (July 28, 1995; 60 FR 38729). In the same listing, EPA required that water mist systems containing additives different than those in potable water, and water mist systems comprised of mixtures in solution must be submitted to EPA for SNAP review on a case-by-case basis. With regard to a water mist and foam system, any changes to the foam mixture may constitute a new formulation and is, therefore, subject to SNAP review.

*Environmental information:* All of the components of Uni-light AFFF 1% have an ozone depletion potential of zero. Its components have a negligible atmospheric lifetime and global warming potential.

One component of Uni-light's foam mixture, 2-(2-Butoxyethoxy) ethanol (also called diethylene glycol monobutyl ether, or DGBE, CAS ID# 112-34-5), is defined as a hazardous air pollutant (HAP) under the Clean Air Act.

The component DGBE is also regulated as a controlled substance by the Toxic Substance Control Act (TSCA). Therefore, all materials used to clean spaces after an accidental should be handled and disposed of as hazardous waste in accordance with federal, state, or local requirements.

*Flammability:* The blend is non-flammable.

*Toxicity and exposure data:* The most toxic component of the foam blend, DGBE, has an occupational exposure limit, 8-hour time-weighted average, of 100 mg/m<sup>3</sup> as a Maximum Concentration Value in the Workplace set by the Federal Republic of Germany. All but two components of the foam blend are classified as "generally recognized as safe" by the U.S. Food and Drug Administration.

As with other fire suppressants, EPA recommends that users minimize exposure to this agent. In order to keep exposure levels as low as possible, EPA recommends the following for establishments installing and maintaining total flooding systems:

- Make self-contained breathing apparatus (SCBA) available in normally occupied areas;
- Wear proper personal protection equipment (impervious butyl gloves, eye protection, and SCBA);
- Clean up all spills immediately in accordance with good industrial hygiene practices; and
- Provide training for safe handling procedures to all employees that would be likely to handle the containers of foam additive.

Use of this agent should conform to relevant Occupational Safety and Health Administration (OSHA) requirements, including 29 CFR part 1910, subpart L, Sec. 1910.160 for fixed fire extinguishing systems, Sec. 1910.163 for water spray and foam systems and Sec. 1910.165 for predischARGE employee alarms. Per OSHA requirements, protective gear (SCBA) should be available in the event of a discharge.

*Comparison to other fire suppressants:* Uni-light AFFF 1% has no ODP; thus, its use will be less harmful to the atmosphere than the continued use of halon 1301. The components of Uni-light AFFF 1% have a GWP comparable with or lower than that of many other acceptable substitutes for halon 1301. Thus, we find that Uni-light AFFF 1% acceptable because it does not pose a greater overall risk to human health and the environment than other acceptable substitutes in the end uses and applications listed above.

**II. Section 612 Program***A. Statutory Requirements*

Section 612 of the Clean Air Act authorizes EPA to develop a program for evaluating alternatives to ozone-depleting substances. We refer to this program as the Significant New Alternatives Policy (SNAP) program. The major provisions of section 612 are:

- *Rulemaking*—Section 612(c) requires EPA to promulgate rules making it unlawful to replace any class I (chlorofluorocarbon, halon, carbon tetrachloride, methyl chloroform, and hydrobromofluorocarbon) or class II (hydrochlorofluorocarbon) substance with any substitute that the Administrator determines may present adverse effects to human health or the environment where the Administrator has identified an alternative that (1)

reduces the overall risk to human health and the environment, and (2) is currently or potentially available.

- *Listing of Unacceptable/Acceptable Substitutes*—Section 612(c) also requires EPA to publish a list of the substitutes unacceptable for specific uses. EPA must publish a corresponding list of acceptable alternatives for specific uses.

- *Petition Process*—Section 612(d) grants the right to any person to petition EPA to add a substance to or delete a substance from the lists published in accordance with section 612(c). The Agency has 90 days to grant or deny a petition. Where the Agency grants the petition, it must publish the revised lists within an additional six months.

- *90-day Notification*—Section 612(e) directs EPA to require any person who produces a chemical substitute for a class I substance to notify the Agency not less than 90 days before new or existing chemicals are introduced into interstate commerce for significant new uses as substitutes for a class I substance. The producer must also provide the Agency with the producer's unpublished health and safety studies on such substitutes.

- *Outreach*—Section 612(b)(1) states that the Administrator shall seek to maximize the use of federal research facilities and resources to assist users of class I and II substances in identifying and developing alternatives to the use of such substances in key commercial applications.

- *Clearinghouse*—Section 612(b)(4) requires the Agency to set up a public clearinghouse of alternative chemicals, product substitutes, and alternative manufacturing processes that are

available for products and manufacturing processes which use class I and II substances.

*B. Regulatory History*

On March 18, 1994, EPA published the final rulemaking (59 FR 13044) which described the process for administering the SNAP program. In the same notice, we issued the first acceptability lists for substitutes in the major industrial use sectors. These sectors include:

- Refrigeration and air conditioning;
- Foam blowing;
- Solvents cleaning;
- Fire suppression and explosion protection;
- Sterilants;
- Aerosols;
- Adhesives, coatings and inks; and
- Tobacco expansion.

These sectors compose the principal industrial sectors that historically consumed the largest volumes of ozone-depleting compounds.

As described in this original rule for the SNAP program, EPA does not believe that rulemaking procedures are required to list alternatives as acceptable with no limitations. Such listings do not impose any sanction, nor do they remove any prior license to use a substance. Therefore, by this notice we are adding substances to the list of acceptable alternatives without first requesting comment on new listings.

However, we do believe that notice-and-comment rulemaking is required to place any substance on the list of prohibited substitutes, to list a substance as acceptable only under certain conditions, to list substances as acceptable only for certain uses, or to

remove a substance from the lists of prohibited or acceptable substitutes. We publish updates to these lists as separate notices of rulemaking in the **Federal Register**.

The Agency defines a “substitute” as any chemical, product substitute, or alternative manufacturing process, whether existing or new, intended for use as a replacement for a class I or class II substance. Anyone who produces a substitute must provide EPA with health and safety studies on the substitute at least 90 days before introducing it into interstate commerce for significant new use as an alternative. This requirement applies to substitute manufacturers, but may include importers, formulators, or end-users, when they are responsible for introducing a substitute into commerce.

You can find a complete chronology of SNAP decisions and the appropriate **Federal Register** citations from the SNAP section of EPA's Ozone Depletion World Wide Web site at <http://www.epa.gov/ozone/snap/chron.html>. This information is also available from the Air Docket (see **ADDRESSES** section above for contact information).

**List of Subjects in 40 CFR Part 82**

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

Dated: March 17, 2006.

**Brian J. McLean,**

*Director, Office of Atmospheric Programs.*

**Appendix A: Summary of Acceptable Decisions**

End-use	Substitute	Decision	Further information
<b>Refrigeration and Air Conditioning</b>			
Motor vehicle air conditioning (retrofit).	R-420A as a substitute for CFC-12.	Acceptable Subject to Use Conditions.	Must be used with fittings and labels specified above.
Motor vehicle air conditioning (new and retrofit) (busses and passenger trains only).	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Industrial process refrigeration (retrofit and new).	R-417A as a substitute for HCFC-22.	Acceptable.	
	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Industrial process air conditioning (retrofit and new).	HFC-245fa as a substitute for CFC-114.	Acceptable.	
	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	

End-use	Substitute	Decision	Further information
Ice skating rinks (retrofit and new)	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
	HFC-245fa as a substitute for CFC-114.	Acceptable.	
	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Cold storage warehouses (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Refrigerated transport (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Retail food refrigeration (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Vending machines (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Water coolers (retrofit and new) ....	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Commercial ice machines (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Household refrigerators and freezers (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Centrifugal chillers (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Centrifugal chillers (new) .....	HFC-245fa as a substitute for CFC-114 and HCFC-123.	Acceptable.	
	HFC-245fa as a substitute for CFC-11.	Acceptable.	
Reciprocating chillers (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	

End-use	Substitute	Decision	Further information
Screw chillers (retrofit and new) ....	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Residential dehumidifiers (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Non-mechanical heat transfer (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Very low temperature refrigeration (retrofit and new).	HFC-245fa as a substitute for CFC-11, CFC-113, HCFC-21, and HCFC-141b.	Acceptable.	
	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	
Very low temperature refrigeration (new).	HFC-245fa as a substitute for CFC-11, CFC-114, and HCFC-141b.	Acceptable.	
Household and light commercial air conditioning and heat pumps (retrofit and new).	ICOR AT-22 as a substitute for HCFC-22.	Acceptable.	
	ICOR XLT1 (R-422C) as a substitute for HCFC-22, R-502, R-402A, R-402B, and R-408A.	Acceptable.	
	ICOR XAC1 (R-422B) as a substitute for HCFC-22.	Acceptable.	

**Foam Blowing**

Rigid polyurethane and polyisocyanurate laminated boardstock.	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation.
Rigid polyurethane appliance .....	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation.
Rigid polyurethane, spray .....	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation. Follow manufacturers' safety guidance for any flammable components in the blend.
Rigid polyurethane, commercial refrigeration and sandwich.	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation.



End-use	Substitute	Decision	Further information
Rigid polyurethane slabstock and other foams.	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation.
Polyurethane integral skin foam ....	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation.
Polyurethane: extruded sheet .....	Transcend™ Technologies as an additive to other SNAP-approved foam blowing agents for this end use as substitutes for CFCs and HCFCs.	Acceptable .....	Decision only applies where the foam blowing blend makes up to 5% by weight of the total foam formulation.

**Fire Suppression and Explosion Protection**

Total flooding .....	Uni-light AFFF 1% as a substitute for Halon 1301.	Acceptable .....	<p>This agent is intended for use on-board ships and in off-shore installations.</p> <p>Appropriate personal protective equipment should be worn during manufacture or in the event of a release. Personal protective equipment should include safety goggles, protective gloves, and a self-contained breathing apparatus.</p> <p>Supply bottles for the foam should be clearly labeled with the potential hazards associated with the use of the chemicals in the foam, as well as handling procedures to reduce risk resulting from these hazards.</p> <p>Use should conform with relevant OSHA requirements, including 29 CFR part 1910, subpart L, §§ 1910.160 and 1910.163.</p> <p>EPA has no intention of duplicating or displacing OSHA coverage related to the use of personal protection equipment (e.g., respiratory protection), fire protection, hazard communication, worker training or any other occupational safety and health standard with respect to halon substitutes.</p>
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**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 180**

[EPA-HQ-OPP-2005-0299; FRL-7759-9]

**Trifloxystrobin; Pesticide Tolerance**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** This regulation establishes a tolerance for combined residues of trifloxystrobin (benzeneacetic acid,

*(E,E)*- $\alpha$ -(methoxyimino)-2-[[[1-[3-(trifluoromethyl)phenyl]ethylidene]amino]oxy)methyl]-methyl ester) and the free form of its acid metabolite CGA-321113 (*(E,E)*-methoxyimino-[2-[1-(3-trifluoromethylphenyl)-ethylideneamino]oxy]methyl-phenyl)acetic acid) pesticide petition (PP 4F6892) in or on corn, sweet, kernel plus cob with husks removed at 0.04 parts per million (ppm), corn, sweet, forage at 0.6 ppm, corn, sweet, stover at 0.25 ppm, and corn, sweet, cannery waste at 0.6 ppm; (PP 3E6769) oat, forage at 0.3 ppm, oat, grain at 0.05 ppm, oat, hay at 0.3 ppm, oat, straw at 5.0 ppm, barley, grain at 0.05 ppm, barley, hay at 0.3 ppm, barley, straw at

5.0 ppm. Bayer Crop Science requested this tolerance under the Federal Food, Drug, and Cosmetic Act (FFDCA), as amended by the Food Quality Protection Act of 1996 (FQPA).

**DATES:** This regulation is effective March 29, 2006. Objections and requests for hearings must be received on or before May 30, 2006.

**ADDRESSES:** To submit a written objection or hearing request follow the detailed instructions as provided in Unit VI. of the **SUPPLEMENTARY INFORMATION.** EPA has established a docket for this action under Docket identification (ID) number EPA-HQ-OPP-2005-0299. All documents in the docket are listed on the