

Commenters requested that EPA clarify whether equipment manufactured and certified under the old standards before the effective date of the new standard will be grandfathered.

ARI and UL indicated in their comments that it will take approximately one year for the equipment certification organizations to complete the recertification process. However, those comments were written and received in 1996. Since that time, the two equipment testing organizations (*i.e.*, UL and ARI) have independently begun to test to the ARI Standard 740–1995, while continuing to test to the 1993 version of the standard in order to satisfy the certification requirement of § 82.158. Therefore, EPA will not provide a one year period for the transition as proposed, but will ease the financial burden on equipment manufacturers by making the requirement to certify to the 1995 version of the standard effective 60 days after this final rule is published in the **Federal Register**.

However, EPA is “grandfathering” existing equipment by maintaining the reference to the 1993 version of the standard as it applies to equipment previously certified to the ARI Standard 740–1993. This is being accomplished by amending § 82.158(b)(1) to reference new appendix B1 (based on ARI Standard 740–1993), such that equipment manufactured on or after November 15, 1993 and before September 22, 2003, must be certified to appendix B1 based on the 1993 edition of the standard. In addition, EPA is maintaining the certification of equipment manufactured before November 15, 1993, that meets the applicable performance standards as set forth at § 82.158(c). Therefore, “grandfathered equipment” will include both (1) equipment manufactured on or after November 15, 1993 but before September 22, 2003, that was certified to ARI Standard 740–1993 by an EPA-approved equipment testing organization and (2) equipment manufactured before November 15, 1993 that meets the applicable performance standards as set forth at § 82.158(c). Equipment manufactured on or after September 22, 2003, must be certified to the new standard set forth at § 82.158(b)(2) and appendix B2 (based upon ARI Standard 740–1995).

While EPA is not requiring recertification of equipment previously certified under the conditions of the ARI Standard 740–1993, EPA is requiring that the three-year retest of certified equipment and inspections of

equipment at manufacturing facilities conducted in accordance with § 82.158(j) subparagraphs (1) and (2) be done to the standard by which the equipment was originally certified in accordance with § 82.158(a).

8. Requirements for Equipment Advertised as “Recycling Equipment”

As proposed, EPA is requiring that equipment that is marketed as “recycling” equipment be able to recycle the sample of dirty refrigerant to the maximum contaminant levels (except for “Other Refrigerants”) listed in the table in IRG–2 when tested under the conditions of ARI 740. As noted in the proposal, EPA believes that technicians and contractors should have some assurance that equipment that is marketed as “recycling equipment” is capable of recycling used refrigerant to some minimum level. This assurance would be especially useful to contractors who recycle refrigerant for reuse into their customers’ equipment. IRG–2 states that recycling equipment that is certified to ARI Standard 740 and capable of consistently recycling refrigerant to the contaminant levels (as detailed in the maximum contaminant level table) should be used. The refrigerant sample used in ARI Standard 740 is representative of a contaminated system, so equipment that can recycle the refrigerant in this test to the contaminant levels of IRG–2 is considered to have acceptable recycling capabilities.

In the proposal, EPA reprinted the IRG–2 table entitled “Maximum Contaminant Levels of Recycled Refrigerants in Same Owner’s Equipment.” EPA received two comments on this table and its use as a standard for equipment advertised as “recycling” equipment. One of the comments noted that it was not appropriate to list maximum contamination by other refrigerants in a standard for recycling equipment, because recycling equipment is not capable of removing contamination by other refrigerants.

EPA agrees and has edited the table accordingly by removing the last row from the chart. The chart in IRG–2 included maximum levels for other refrigerants because its original purpose was to establish a general standard for the level of impurities, including other refrigerants, for refrigerant that is intended to be reused in the same owner’s equipment. Thus, it included maximum levels for all the common contaminants of refrigerant, including other refrigerants. EPA has also edited

the column labeled Low-pressure systems to reference the refrigerants used by low-pressure appliances for which the recycling equipment is intended.

One commenter asked why the limit for moisture in Table 1 was set at 20 ppm, while the limit for moisture in the ARI 700 standard is set at 10 ppm. The ARI 700 standard establishes a moisture limit of 10 ppm for high-pressure refrigerants and a limit of 20 ppm for low-pressure refrigerants. Table 1 sets a moisture limit of 10 ppm for R–12, and a limit of 20 ppm for other refrigerants.

The moisture limits are set in consideration of both the technical limits of recycling equipment and the tolerance of different types of refrigerants for moisture. The moisture limits in the IRG–2 standard (from which Table 1 is drawn) for most high-pressure refrigerants are slightly higher than those in the ARI Standard 700 in recognition of the fact that even high-quality recycling equipment may not be able to lower moisture levels to those in the Standard. A lower limit was established for R–12 in the IRG–2 Standard from which Table 1 is drawn because water is significantly less soluble in R–12 at its typical operating temperatures than in other refrigerants at their typical operating temperatures. For instance, at 20 degrees F (well within the range of typical evaporator temperatures for both R–12 and R–22 systems), the solubility of water in R–12 is just 16.6 ppm, while the solubility of water in R–22 is 472 ppm. This means that free (undissolved) water forms at much lower moisture levels in systems using R–12 than in systems using other types of refrigerants, and free water can damage or interfere with the functioning of air-conditioning and refrigeration systems by corroding system components or by restricting or even stopping the flow of refrigerant through the system. Thus, it is critical to keep moisture levels well below those where free water can form.

As proposed, EPA is making this change for certification of recycling only equipment effective 90 days after publication of this final rule, in order to give manufacturers the opportunity to change their advertising and marketing materials. Recycling only equipment that is manufactured on or after October 22, 2003, must be certified to appendix B2 (based on ARI Standard 740–1995) and must be able to recycle the dirty refrigerant sample under the conditions of appendix B2 to the levels stated in the following table.