



## **Why is it important for ice rinks that operate on R22 refrigerants to address refrigeration alternatives NOW?**

The U.S. EPA (Environmental Protection Agency) has mandated limits of the production and importation of virgin R22 since 2015. Contractors who have found virgin hydrochlorofluorocarbon (HCFC)-22 readily available at their local supply houses had best prepare for a drastic drop-off in such supplies very soon.

Only 9 million pounds will be allowed in 2018, and 4 million pounds in 2019. No new or imported R-22 will be allowed in the U.S. on or after Jan. 1, 2020.

**ComStar's RS-45 (R434a) has been used in flooded chillers systems in Europe for decades as a proven drop in replacement**

1. The easiest and least expensive way to keep the R22 ice rinks running is to convert to RS-45 (R434a). Approximately 1600 ice rinks in the U.S. currently operate with R22. Ice rinks who begin the process early to convert systems will avoid having to make costly decisions and avoid closing ice pads and rinks.
2. There are no EPA plans to phase out the RS-45 refrigerant.

**RS-45 was introduced to the U.S. ice rink community in May of 2016. Since then, dozens of rinks have converted to RS-45.**

1. The rinks converted were both the "direct" flooded system (e.g., the liquid refrigerant is under the ice pad floor) and the DX "indirect" system that contains a chiller barrel with glycol or brine under the ice pad floor.
2. The direct over-feed flooded system can hold from 4,000 lbs. to 10,000 lbs. per ice pad of R22 refrigerant. The DX indirect system can operate on 500 lbs. to 1,500 lbs. or more of R22.
3. All types rinks that run on R22 can be converted to one that runs on RS-45. The easiest to convert are the indirect Cimco brands and the direct systems made by various manufacturers (e.g., C.W. Davis, Ice Pro, Ice Builders).

### **RS-45 (R434A) Technical Bulletin**

**When considering RS-45 as a replacement for R22 in flooded systems, the following are important issues that must be addressed:**

1. RS-45 requires 40% more mass flow than R-22