



# MRBraz and Associates, PLLC

## COOL NEWS

April 2019: Issue 12

### MRBraz Featured on Ammonia21.com

### Manufacturing at 1114

Ammonia21.com recently featured MRBraz and Associates on their website, see below for article: MRBraz & Associates, a supplier of industrial refrigeration and air-conditioning (AC) equipment, said that in 2019 it will install low-charge packaged ammonia/glycol DX chillers providing AC for offices at six warehouses operated a major U.S. retailer.

The company has previously supplied this AC chiller to 10 of the retailer's warehouses since 2012. "As [the retailer] sees an ROI, they are putting in more in 2019," said Daniel Braz, vice president of operations for MRBraz. (He declined to name the retailer without their permission.) The AC chillers are replacement units for R22 systems using 180-220 lbs. of refrigerant.

Braz spoke about the AC units at the [IIAR Natural Refrigeration Conference & Expo](#), held in Phoenix March 4-6. In 2017, MRBraz displayed the AC unit at the IIAR Conference in San Antonio, Texas.

MRBraz also has two more [low-charge AC chillers] in the manufacturing stage that will be installed the following fiscal year at the retailer's warehouses. "One is in California, and we're excited to see how it goes there," he said, pointing out the new HFC-reduction legislation the state is implementing.



In addition, MRBraz is working with a school district in Houston, Texas, on a plan for a new high school that would use the AC units rather than a synthetic-refrigerant system. A mobile trailer unit is also available. Low-charge ammonia AC chillers are relatively rare in the U.S. "It's gaining ground, but it takes time to cultivate it and show it works," Braz said. "But legislation and technology are making a fertile ground for natural refrigerant to come into the HVAC space."

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*– Daniel Braz, MRBraz & Associates*

MRBraz's skid-mounted AC chiller, stationed in a parking lot outside the retailer's warehouse, is designed with only about 1 lb./TR of ammonia, which is confined to the unit; it pumps a chilled glycol solution as a secondary coolant to an air handling unit, which delivers cool air to the office space.

The typical chiller contains about 100 lbs. of ammonia for 100 TR of capacity cooling 25,000 sq. ft of space; it employs a VFD screw compressor, ECM fan motors an air-cooled condenser, food grade oil, and an ammonia/glycol heat exchanger with a temperature approach of only 3°F-5°F. The units, available in capacities ranging from 30-110 TR, require a single 180-V power feed.

Dan Braz presented data showing the efficiency benefits of the AC units. He pointed out that ammonia has a lower HP/TR (1.3) than R22 (1.5) and HFCs like R410A (1.7) and R134a (1.5). In one example, the MRBraz AC chiller uses 1.99 HP/TR compared to 2.15 HP/TR for a pre-existing R22 chiller; the COP's were 2.37 and 2.20, respectively. In its first year of operation, the low-charge chiller saved the warehouse about \$100,000, which produced a "healthy ROI," said Braz.

MRBraz handles the manufacturing, installation and maintenance of the units – from "cradle to grave," said Braz. It also does performance monitoring for preventive maintenance.

To enhance the safety of the AC units, leaked ammonia is dispersed vertically by fans several hundred ft into the air "where it is not harmful," said Braz. Permits to use the units have been obtained without difficulty from local municipalities, he added.

The company reports no complaints about ammonia leaks in the retailer's parking lots.

Source: Michael Garry, Ammonia21.com

7030: 5TR AHU



6009: Painting Finished for 40TR DX





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### Earth Day: April 22

Monday, April 22nd is Earth Day, a day to inspire awareness and appreciation for protecting health and the environment. Here at MRBraz we are proud to do our part, not just during Earth Day but everyday!

Our Critically Charged Ammonia DX Packages are environmentally friendly by causing zero ozone depletion and no global warming potential; our Air Cooled Condensers' efficient design conserve water. In honor of Earth Day, here are a few fun and unusual facts about Earth:

- The largest flower on Earth is also the smelliest. Native to Sumatra, The corpse flower smells like rotting flesh.
- An estimated 80% of creatures on Earth have six legs.
- The tallest known tree on Earth is a redwood tree in a California forest. Nicknamed "Hyperion," it is about twice as tall as the statue of liberty, at 380 feet high.
- Earth's rapid rotation coupled with its nickel-iron core creates a powerful magnetic field. The field protects the Earth from damaging solar winds.
- Someone standing on Earth's equator would be turning around Earth's center at 1,000 mph. However, someone standing at the poles would be standing still (while turning in a circle, similar to standing on top of basketball).
- The Earth travels through space at 67,000 mph. This means that everyone on Earth is 67,000 miles farther away than they were an hour ago.
- The hottest temperature ever recorded on Earth's surface was 136 degrees F in El Azizia, Libya in 1922.
- The coldest temperature ever recorded was in Antarctica's Vostok Station at a bone chilling minus 128 degrees F.
- Scientists believe that Earth's stable climate is an anomaly that will end in the next billion years.
- Antarctica holds about 90% of the Earth's ice and 70% of Earth's fresh water.
- Sea levels on Earth would rise about 60 m (200 ft) if all the ice in Antarctica were to melt.
- Earth's magnetic north pole is moving north about 10 miles per year. Eventually, Earth's magnetic poles will switch.

Source: National Geographic

Don't forget the MRBraz 10th Year Anniversary party is May 17th. If you haven't already, RSVP to Carol Earman by April 5th. Hope to see you there!



### Waste and the Future

We are all wired to reason, evaluate and make small decisions in our daily routines. Each decision we make can have a great impact on the future, and some are harder to make than others. For example I could drink a chocolate sundae (large, extra chocolate and whole milk please) every day, if I had no worries about my next visit to the doctor. So I made the very hard decision to only have them on the weekends. Limited to just one though, unfortunately!

I am really excited to see our line of products growing and the company making its mark on this market with safer and environmentally oriented designs. It is a continuous process of adapting to changes, making choices and working with better ideas. As you all know our line of products uses a natural refrigerant, saves water and energy usage.

In this world, with the population at 7.7 billion, it is important to understand that we are always creating waste with the ever growing population around us. It makes one aware of the constant push for modernization and adaptation of the products around us. Natural resources will continue to be stretched, and the undesirable sub products continue to grow. For example, due to the convenience of cheaper wrapping and containing, plastic substances create tons of waste without any timely recovery process. Refer to the Great Pacific Garbage Patch with 1.8 trillion pieces of plastic and estimated at 80,000 tons between Hawaii and California. Even the Earth's orbit is getting it. Over 130 million pieces of space debris, in many sizes, are "sandblasting" the satellites; which are so important to keep our daily lives functional, such as GPS, weather and cell phones.

The waste just continues to grow... closing in on us more and more each day. So let's do our part! Recycling is important, but more important still is to avoid wasteful behaviors around us. Waste, trash, including trash bag usage should be thought over. Remember that the future generations will be looking after what we leave behind. Hopefully, not cleaning after us. Our company needs to continue to look for better choices and improve our daily routines that generates waste.

We are working to make our products more competitive and environmentally conscious, and it can be an uphill battle. Let's focus on what we can do to make a difference in this world. It does require discipline, respect for each other and a great deal of effort on keeping our "trails" clean. BTW, I will try to buy the ingredients and make my chocolate sundae at home, avoiding using plastic or foam cups. Only on the weekend, of course.

—Marcos Braz P.E., President

### Birthdays And Anniversaries



- 4/7 Charlie's Birthday
- 4/11 Christi's Anniversary
- 4/17 Megan's Birthday
- 4/19 Juan's Birthday
- 4/19 Stacy's Birthday
- 4/24 Nate's Anniversary

### LOL Break

1. Why are frogs so happy?

*They eat whatever bugs them.*

2. What did the zero say to the eight?

*Nice belt.*

3. Did you hear about the claustrophobic astronaut?

*He just needed a little space.*

