



**TRANE**

**Chillers for Tomorrow...  
Today**



# Ingersoll-Rand Commitment

## Reducing Greenhouse Gas Emissions

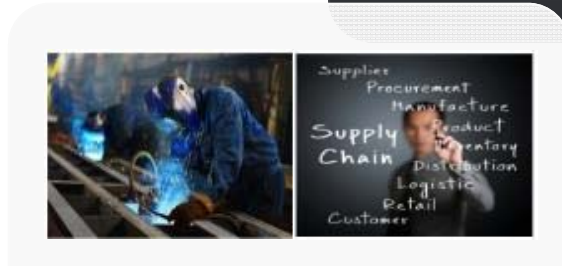
Our company is helping to solve some of the world's most pressing challenges – including the unsustainable demand for energy resources and impact on greenhouse gas emissions.



**Our Products**

50% reduction in GHG via:  
1) increased energy-efficient products;  
2) use of next generation refrigerants with lower GWP in refrigerant-based products by 2020

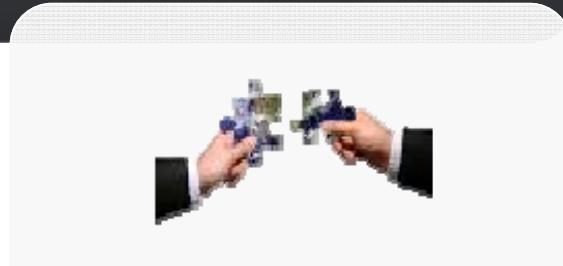
**50%**



**Our Operations**

35% GHG reductions in our office buildings, manufacturing facilities and fleet by 2020

**35%**



**Market Leadership and Convening**

\$500M in research to promote energy efficiency & solve refrigerant gaps via innovation, research, testing, policy over the next 5 years

**\$500M**

Ingersoll-Rand & Trane committed & focused on all aspects of the business

# New products provide safe, efficient alternatives for common HFCs (R134a and R410a)



## Centrifugal chillers

- Refrigerant R1233zd GWP = 4.5
- More efficient than HFC chillers
- Non-flammable, Non-Toxic



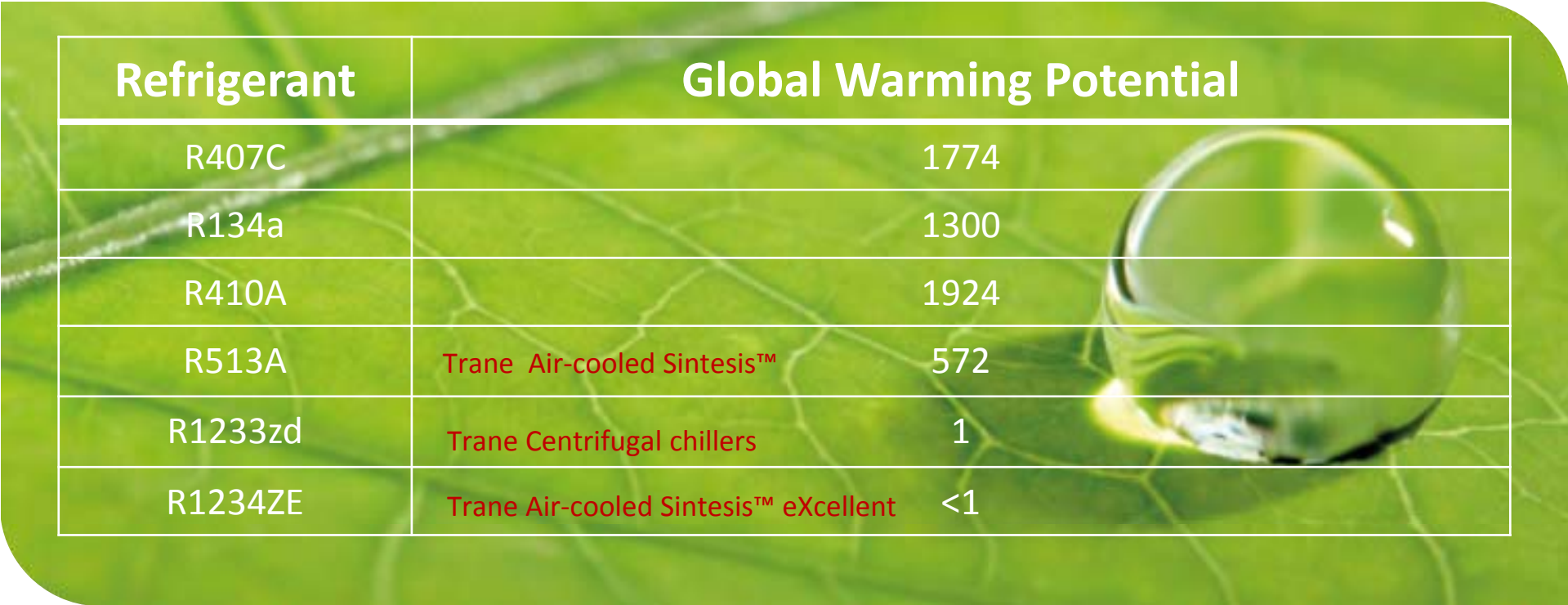
## Air cooled chillers

- Refrigerant R513A GWP = 631 (56% lower vs. R134a)
- Refrigerant R1234ZE GWP <1
- Up to 40% less refrigerant
- Non-flammable, Non-Toxic

Researching **the safest solutions** with the best performance in all climates



# Trane provides widest range of choices

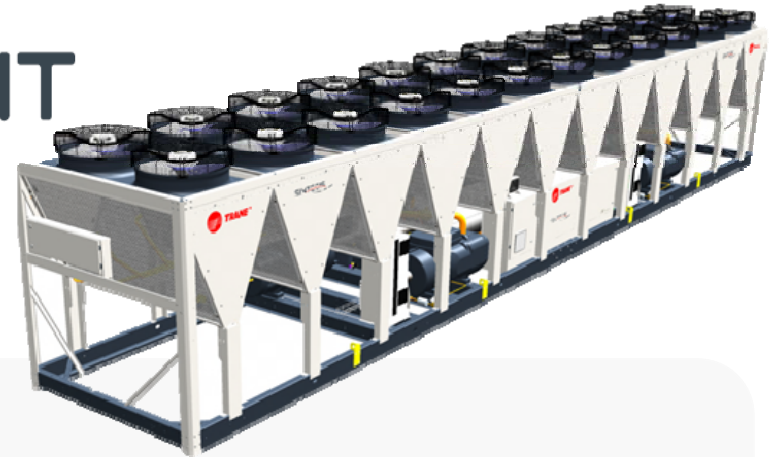


Refrigerant		Global Warming Potential
R407C		1774
R134a		1300
R410A		1924
R513A	Trane Air-cooled Sintesis™	572
R1233zd	Trane Centrifugal chillers	1
R1234ZE	Trane Air-cooled Sintesis™ eXcellent	<1

*GWP is the global warming impact relative to the impact of the same quantity of carbon dioxide over a 100 year period. (CO2 : GWP = 1)*

# SINTECIS

# EXCELLENT

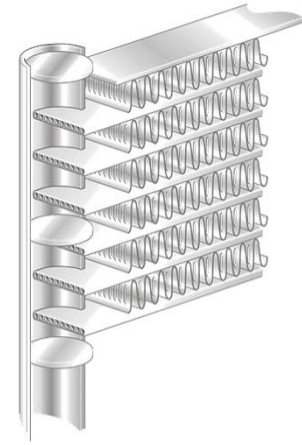
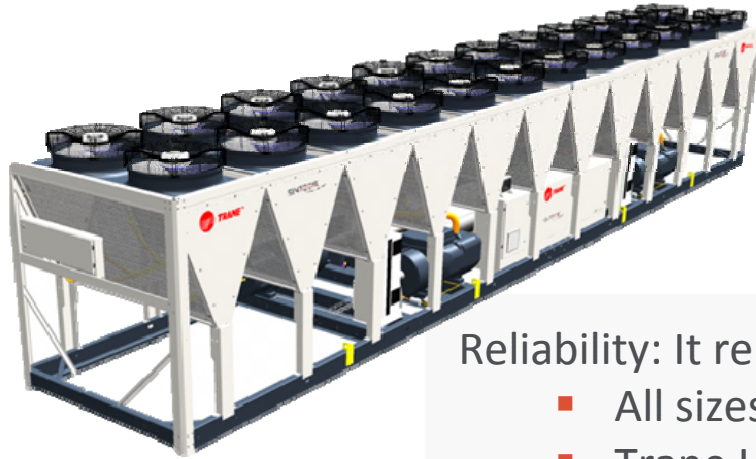


- Best of market Full & Part Load Efficiency
- EUROVENT certified
- Zero GWP **R1234ZE, Safe: Non-toxic, R1234ze is A1 in Europe and cannot be ignited at room temperature.** (acc. CLP reg. EC 1272/2008)
- High Speed Centrifugal compressors
- Integrated within Trane's latest innovations
  - Microchannel condenser
  - EC Fans standard
  - CHIL\* Evaporator (reduced charge)
  - Trane UC800 Integrated Controls
  - Free Cooling Options
- 450 – 1250kW (R1234ZE) / 1600kW (R134a)

Meeting the expectations of tomorrow with guaranteed best performances

# SINTECIS

# EXCELLENT



Reliability: It remains hard to stop a Trane

- All sizes double circuit
- Trane UC 800 State of Art controls
  - Adaptive Control™
  - Serial / IP communication (BACnet / Modbus)
  - VPF control
- Microchannel coils
- Evaporator with automatic charge containment
- Trane's well trained Service organization to maintain top performance

Reliability – as per the TRANE standard



SINTECIS  
EXCELLENT



**Ready for the future**  
**No compromises**