DELIVERING FOOD FRESH GLOBALLY

Where cold chains are lacking worldwide, **200 million tonnes** of food spoil before reaching market every year.

Globally, most modern temperature controlled refrigerated transport relies on HFC refrigerants.

There are around **4 million refrigerated road vehicles** in use around the world.

BY ROAD, RAIL & SEA

- **Intermodal Containers**: refrigerated containers
- **Rail**: refrigerated railcars
- **Road**: refrigerated vans, trucks or trailer-mounted systems
- **Sea**: refrigerated ships

PERFORMANCE AND SAFETY MATTERS

Technical requirements for transport refrigeration systems are very complex.

- Technical requirements for transport refrigeration systems are very complex.
- They have to operate over a wide range of weather conditions, carry different cargos at different temperatures, sometimes with two different compartments at different temperatures.
- They have to be very robust and reliable to withstand vibrations and shocks, and must meet ship and road safety requirements.

WHY ARE HFCS USED?

- **Refrigerant**: HFCs are very effective refrigerants for mobile applications and used in all transport types.
- **Efficient**: As refrigerant, HFC has energy-related advantages in hot climates.
- **Safe**: HFCs are non-flammable which is key when used on the road or on board a ship.
- **Insulation**: Many refrigerated trucks and containers use HFCs as the foam blowing agent due to its good insulation performance meeting thickness requirements to maximise cargo space.

WHAT HAPPENS DUE TO F-GAS REGULATION 517/2014?

The HFCs refrigerants currently used can continue to be used in refrigerated transport systems. But from 2020, the 40 tonne CO₂ charge limit for servicing and maintenance for refrigerants with a GWP >2500 will affect all HFC 404A transport refrigeration systems with a charge size greater than 10.2 kg. Most refrigerated road and containers systems have less than 10 kg of refrigerant.

From 2017, pre-charged refrigerated transport equipment placed on the EU market must have the HFCs accounted for in the quota system.

From 2023, HFCs with a GWP >150 are banned in the foam insulation for new transport systems placed on the EU market.

A new class of blowing agents (HFOs) with similar properties to HFCs is under development.

www.fluorocarbons.org