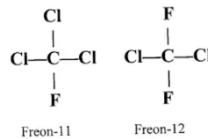


יישומים של קררים חדשים והשלכותיהם HFO Refrigerants Applications and Implications



Topics

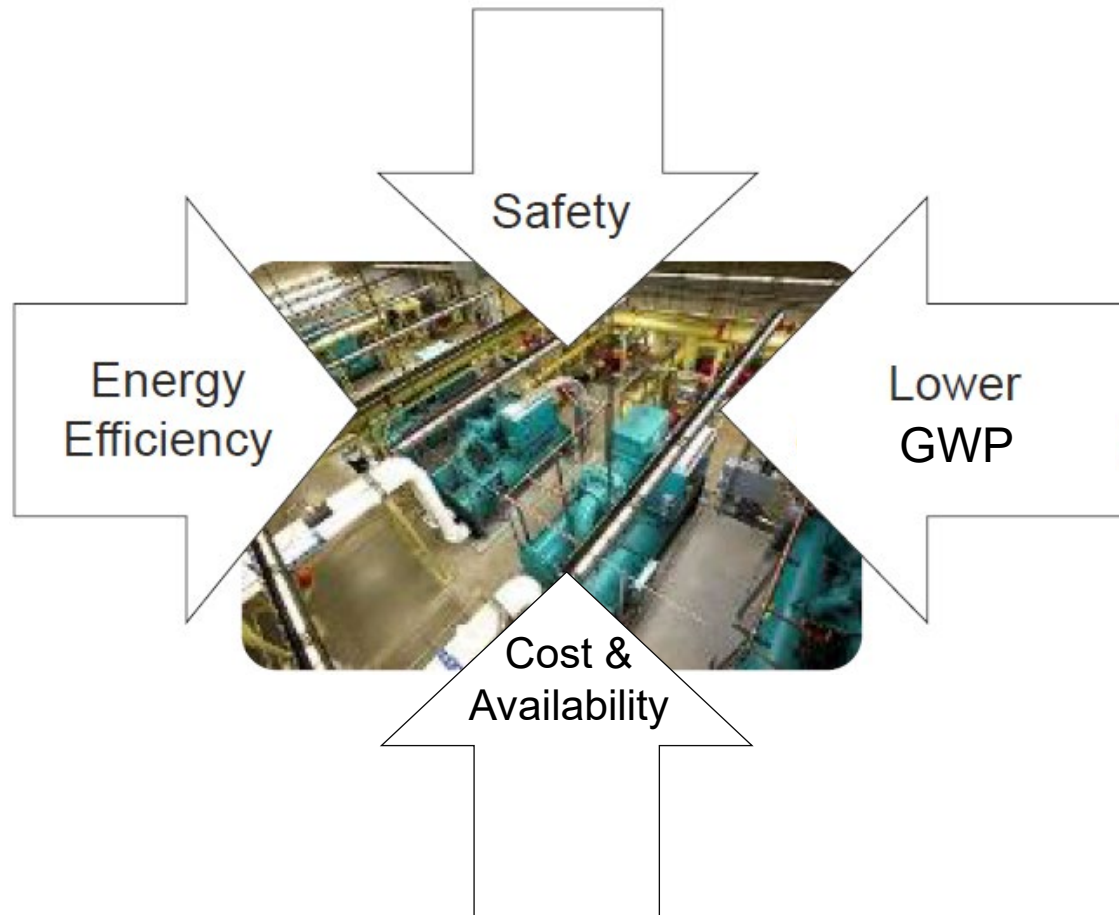
- Driving Forces
- Refrigerants Compositions
- HFO Chiller Applications
- HP Refrigerants Deficiencies
- ¹ Key Takeaways

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יישומים של קררים חדשים והשלכותיהם

HFO Refrigerants Applications and Implications

Driving Forces



יישומים של קררים חדשים והשלכותיהם HFO Refrigerants Applications and Implications Refrigerants Compositions CFC > HFC > HFO

R-1234ze(E)

conformation (if applicable); E = *trans*, Z = *cis*

isomeric designation (if applicable)

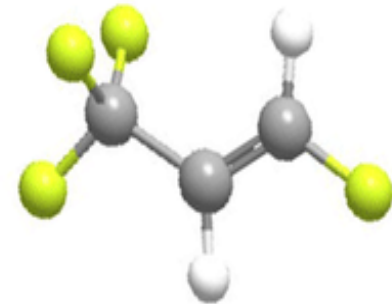
number of fluorines

number of hydrogens + 1

number of carbons – 1 (omit if $N_C = 1$)

number of unsaturated bonds (omit for saturated compounds)

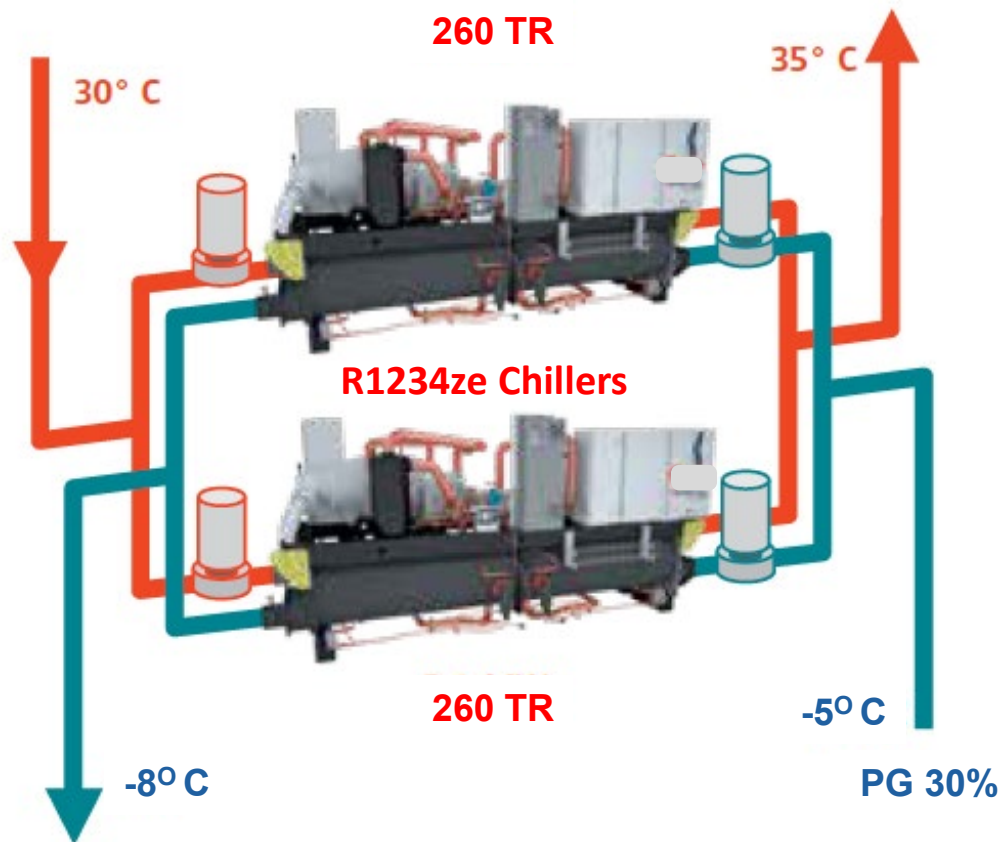
"R" = "refrigerant"; composition-designating prefixes also allowed (e.g., CFC, HFC, HFO)



יישומים של קררים חדשים והשלכותיהם

HFO Refrigerants Applications and Implications

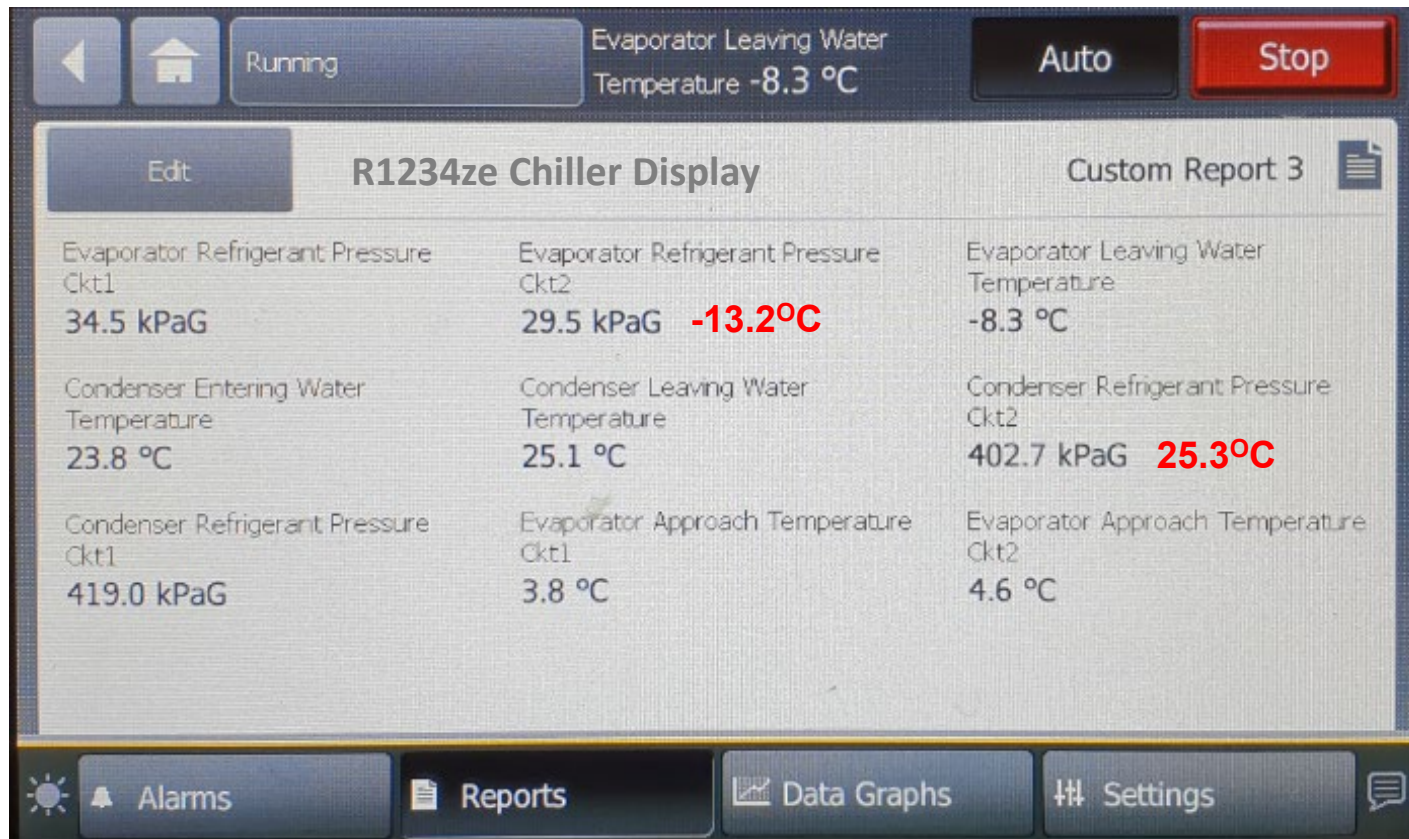
HFO R1234ze Chiller Application



יישומים של קררים חדשים והשלכותיהם

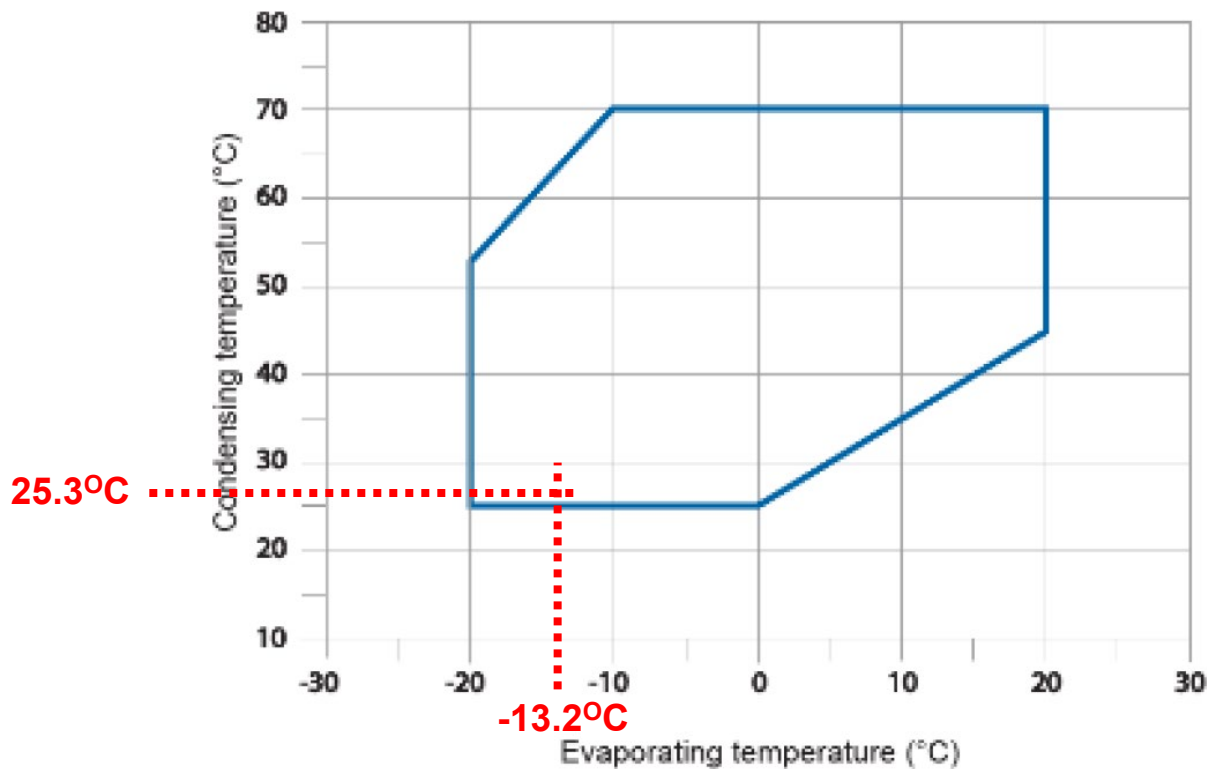
HFO Refrigerants Applications and Implications

HFO R1234ze Chiller Application

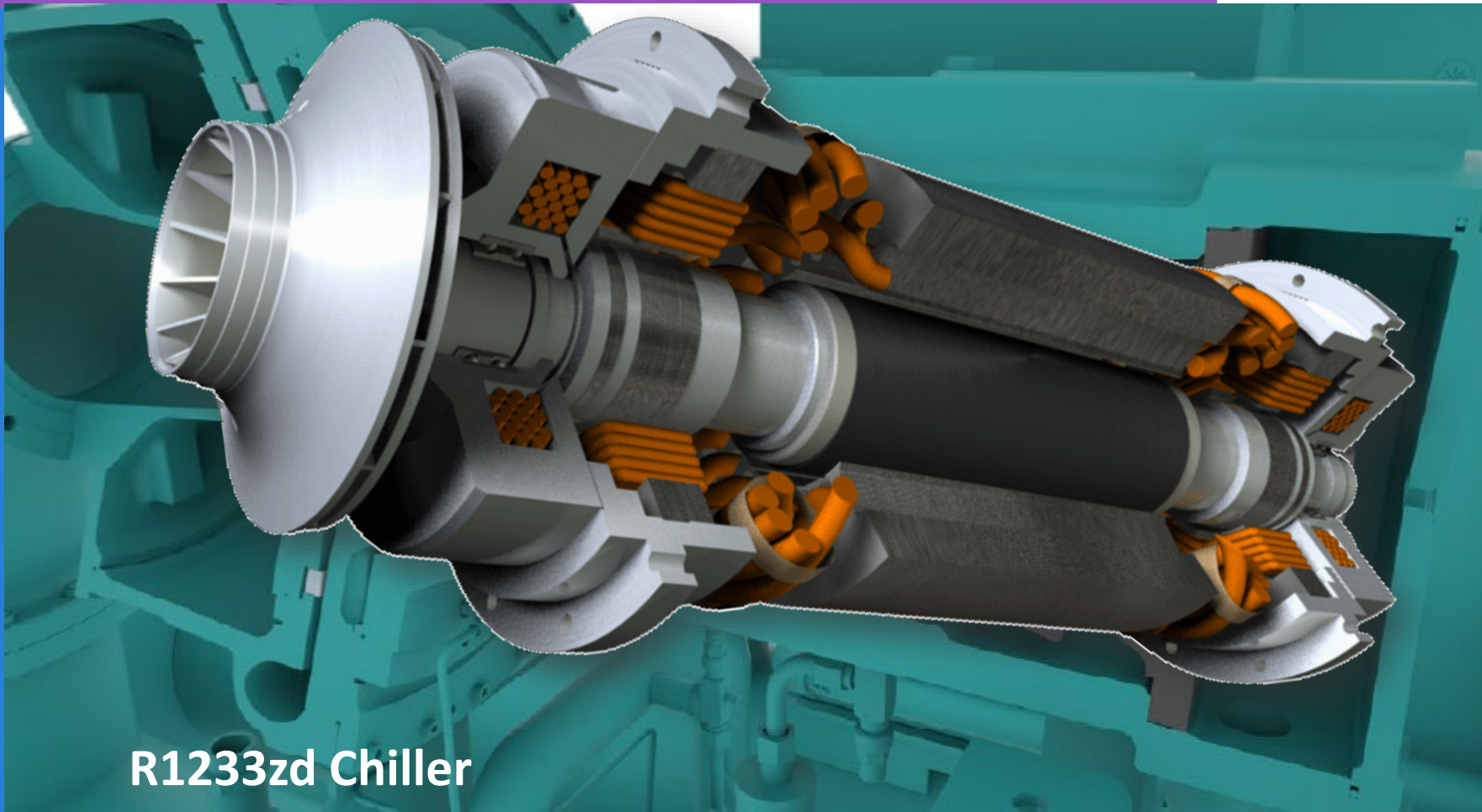


יישומים של קררים חדשים והשלכותיהם HFO Refrigerants Applications and Implications HFO R1234ze Chiller Application

R1234ze(E)



יישומים של קררים חדשים והשלכותיהם
HFO Refrigerants Applications and Implications
HFO R1233zd Chiller Application

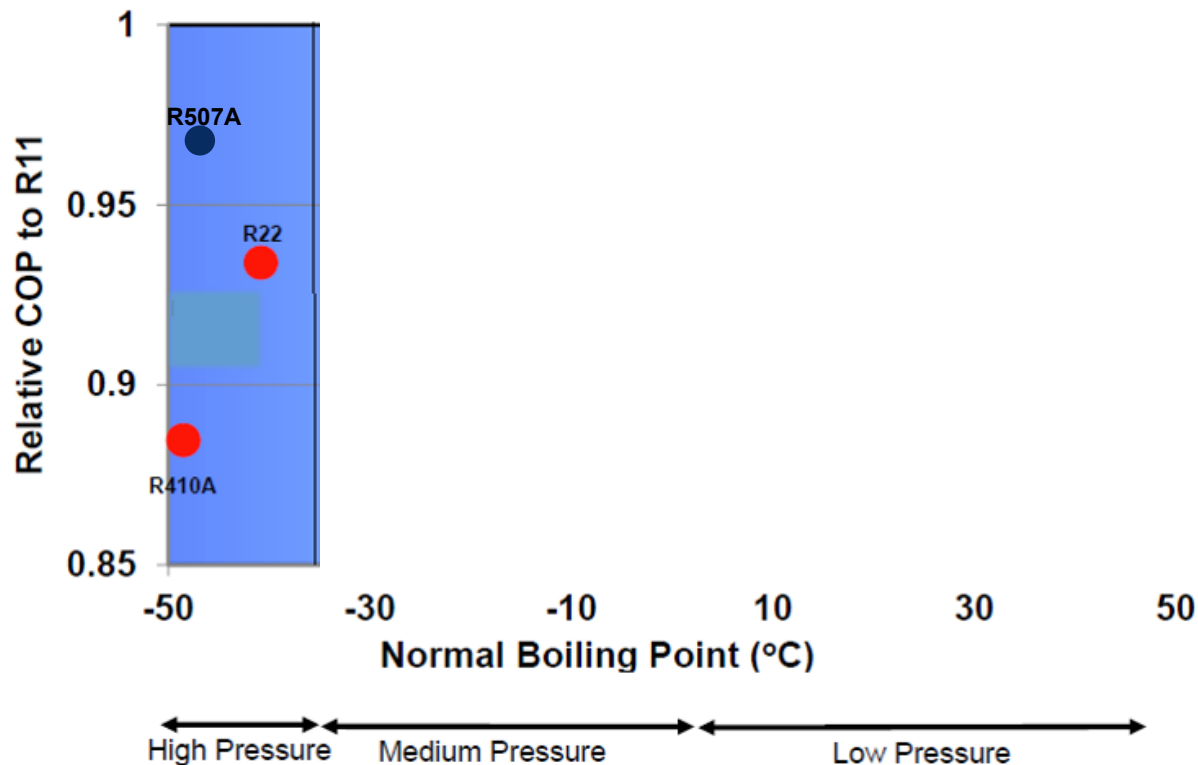


יישומים של קררים חדשים והשלכותיהם

HFO Refrigerants Applications and Implications

High Pressure Refrigerants Deficiencies

Refrigerant Cycle Efficiency



יישומים של קררים חדשים והשלכותיהם

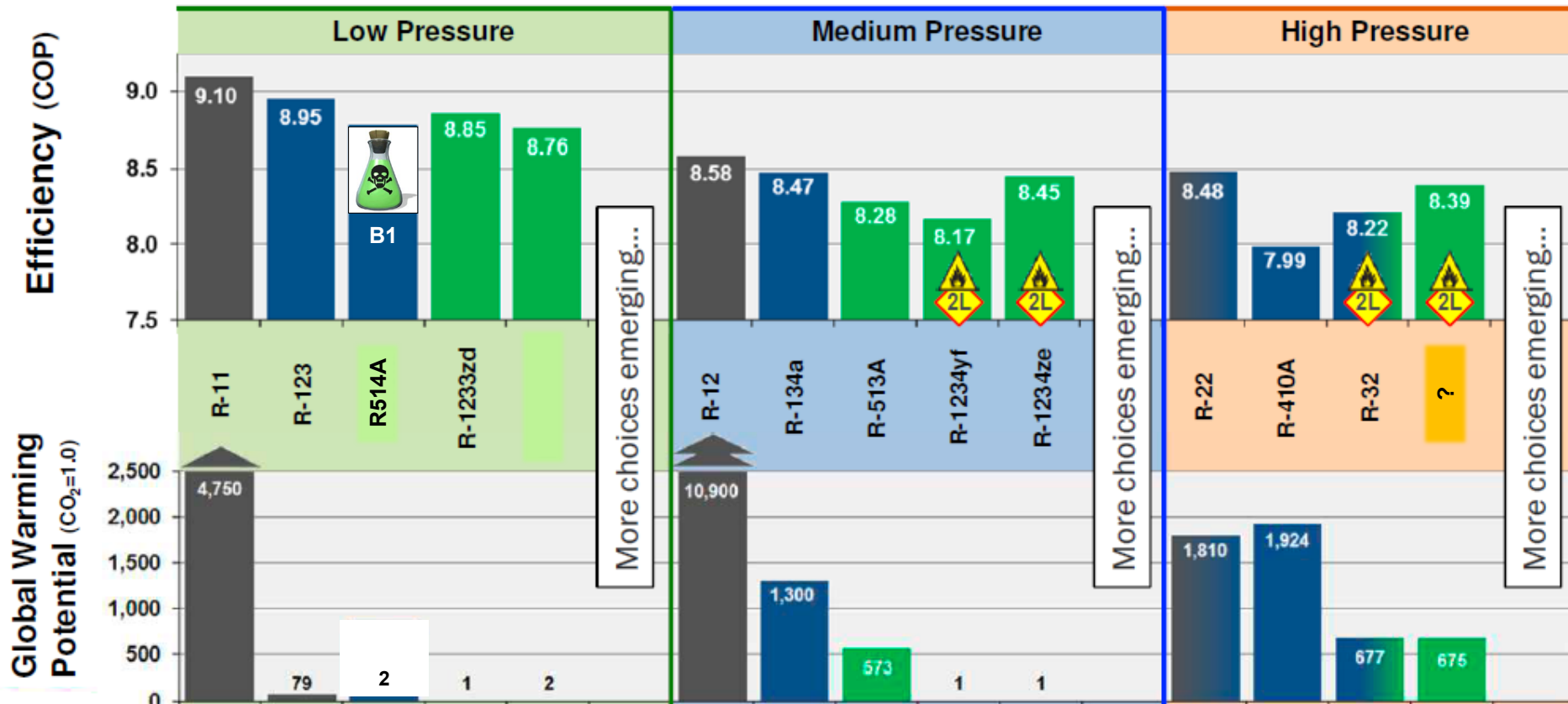
HFO Refrigerants Applications and Implications

High Pressure Refrigerants Deficiencies

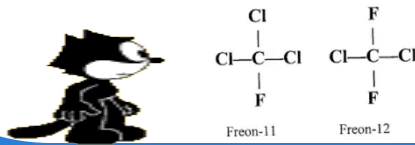
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HVAC Industry Next Transition Begins...

Past Present Future



יישומים של קררים חדשים והשלכותיהם HFO Refrigerants Applications and Implications



Key Takeaways

Ensure Application Within Performance Envelope

- HT Air-cooled R1234Ze Applications Preferred

HFO Deficiencies for R410A & R507A Alternatives

- R32 Applications are Limited (A2L Flammability)
- No Sustainable Alternative for VRF Systems
- No Sustainable Drop-in for LT Systems
- Installed VRF & Refrigeration Systems at Shortage?

מוגש ע"י: מהנדס יוני מלאכי

