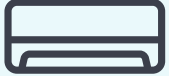
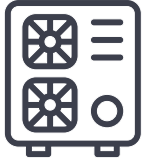
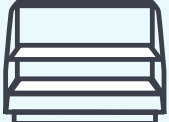
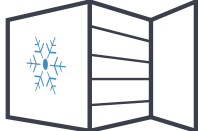
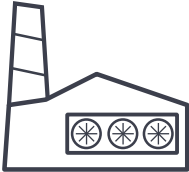






# Soluții de înlocuire a agenților frigorifici

		Echipament nou	
Aplicație	Agent frigorific curent	GWP mic (<750) Soluție provizorie	GWP foarte mic (<150) Soluție pe termen lung
 <b>Aer condiționat</b>	Chiller	R-134a (1430, A1) ◀ R-513A (631, A1) R-515B (293, A1) ◀	R-1234ze (7, A2L) ◀ R-1234yf (4, A2L) ◀
	Chiller Single split sau VRF	R-410A (2088, A1) ◀ R-32 (675, A2L) R-452B (698, A2L) R-454B (466, A2L) ◀	R-1234ze (7, A2L) ◀ R-471A (148, A1) ◀
 <b>Pompe de căldură</b>	Monobloc (în aer liber)	R-410A (2088, A1) ◀ R-32 (675, A2L) R-454B (466, A2L) ◀	Propan* (R-290) (3, A3) ◀ R-1234yf (4, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
	Sisteme split	R-410A (2088, A1) ◀ R-32 (675, A2L) R-454B (466, A2L) ◀	R-1234yf (4, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
 <b>Refrigerare comercială</b> (Retail)	Multi-compresor >40kW	R-448A (1387, A1) ◀ R-449A (1397, A1) ◀	CO <sub>2</sub> (R-744) (1, A1) ◀ R-471A (148, A1) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
	Un singur compresor sau <40kW	R-448A (1387, A1) ◀ R-449A (1397, A1) ◀	R-454A (239, A2L) ◀ R-471A (148, A1) Numai TM ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
  <b>Refrigerare comercială</b> (Non-retail) & <b>Industrie ușoară</b>	Unitate de condensare TM	R-134a (1430, A1) ◀ R-513A (631, A1) R-515B (293, A1) ◀	R-1234ze (7, A2L) ◀ R-1234yf (4, A2L) ◀ R-471A (148, A1) ◀
		R-448A (1387, A1) ◀ R-449A (1397, A1) ◀	R-454A (239, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
	Unitate de condensare TJ	R-448A (1387, A1) ◀ R-449A (1397, A1) ◀ R-452A (2140, A1) ◀	R-454A (239, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
	Răcitor (chiller) rapid	R-448A (1387, A1) ◀ R-449A (1397, A1) ◀	R-454A (239, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
	Congelator rapid	R-448A (1387, A1) ◀ R-449A (1397, A1) ◀ R-452A (2140, A1) ◀	R-454A (239, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
 <b>Industrie</b>	Chiller / Unitate de condensare / Sistem expansiune directă	R-448A (1387, A1) ◀ R-449A (1397, A1) ◀	R-454A (239, A2L) ◀ R-454C (148, A2L) ◀ R-455A (148, A2L) ◀ CO <sub>2</sub> (R-744) (1, A1) ◀
		R-134a (1430, A1) ◀ R-513A (631, A1) R-515B (293, A1) ◀	R-1234ze (7, A2L) ◀ R-1234yf (4, A2L) ◀ R-471A (148, A1) Numai TM ◀
		R-410A (2088, A1) ◀	R-1234ze (7, A2L) ◀
	Vaporizatoare înecate	R-134a (1430, A1) ◀ R-513A (631, A1) R-515B (293, A1) ◀ R-717 Amoniac (0, B2L) ◀ R-507A (3985, A1) ◀	R-1234ze (7, A2L) ◀ R-1234yf (4, A2L) ◀ R-717 Amoniac (0, B2L) ◀ R-1234ze (7, A2L) Numai TM ◀
 <b>Automotiv</b>	Aer condiționat	R-134a (1430, A1) ◀ R-456A (687, A1) ◀	R-1234yf (4, A2L) ◀
 <b>Transport</b>	Mic	R-134a (1430, A1) ◀ R-513A (631, A1) ◀	R-1234yf (4, A2L) ◀
	Mare	R-452A (2140, A1) ◀ R-454A (239, A2L) ◀	R-454C (148, A2L) ◀ R-455A (148, A2L) ◀
		Echipamente existente și noi cu cel mai mic GWP disponibil	
 <b>Temperatură foarte joasă</b> (<-50°C)	Depozitare medicală Liofilizatoare Camere de testare	R-23 (14800, A1) ◀ R-508B (13396, A1) ◀	R-473A (1831, A1) ◀

\* pompă de căldură aer/apă  
GWP: Valorile IPCC4 / A1 = neinflamabil / A2L = ușor inflamabil / A3 = foarte inflamabil