

**MATERIALS COMPATIBILITY & LUBRICANTS RESEARCH (MCLR) PROGRAM
INDEX OF FINAL REPORTS**

DOE MCLR Report Number	Title	Author(s)	Company
DOE/CE/23810-5	Chemical and thermal stability of refrigerant-lubricant mixtures with metals	D. F. Huttenlocher	Spauschus Associates, Inc.
DOE/CE/23810-7	Theoretical evaluation of R22 and R502 alternatives	P. A. Domanski D. A. Didion	Building Environment Division, National Institute of Standards and Technology (NIST)
DOE/CE/23810-10	Accelerated screening methods for determining chemical and thermal stability of refrigerant-lubricant mixtures, Part I: Method assessment	R. Kauffman	University of Dayton Research Institute
	Compatibility of refrigerants and lubricants with motor materials		
	Volume I: Final report		
DOE/CE/23810-13	Volume II: Effects of refrigerant exposures on motor materials	R. Doerr	The Trane Company
	Volume III: Effects of refrigerant-lubricant exposures on motor materials	S. Kujak	
	Volume IV: Photographs of motor materials after exposure to refrigerants and refrigerant-lubricants		
DOE/CE/23810-14	Compatibility of refrigerant and lubricants with elastomers	G. R. Hamed R. H. Seiple O. Taikum	Institute/Department of Polymer Science, University of Akron
DOE/CE/23810-15	Compatibility of refrigerant and lubricants with engineering plastics	R. C. Cavestri	Imagination Resources, Inc.
DOE/CE/23810-16	Thermophysical properties	R.F. Kayser	Thermophysics Division, NIST
DOE/CE/23810-17	EHD enhancement of pool and in-tube boiling of alternate refrigerants	M. M. Ohadi S. Dessiatoun A. Singh M. A. Fanni	Center for Environmental Energy Engineering, University of Maryland, College Park
DOE/CE/23810-18	Miscibility of lubricants with refrigerants	M. B. Pate S. C. Zoz L. J. Berkenbosch	Department of Mechanical Engineering, Iowa State University of Science and Technology
DOE/CE/23810-34	Solubility, viscosity and density of refrigerant/lubricant mixtures	D. R. Henderson	Spauschus Associates, Inc.
DOE/CE/23810-39	Thermophysical properties of HFC-143a and HFC-152a	W. M. Haynes	Thermophysics Division, NIST
DOE/CE/23810-41	Accelerated screening methods for determining chemical and thermal stability of refrigerant-lubricant mixtures, Part II: Experimental comparison and verification of methods	R. Kauffman	University of Dayton Research Institute
	Volume I: Final report		
	Volume II: In situ conductivity data		

DOE MCLR Report Number	Title	Author(s)	Company
DOE/CE/23810-42G	Methods development for measuring and classifying flammability/combustibility of refrigerants, Task 1: Annotated bibliography and summary	E. W. Heinonen R. E. Tapscott	The Center for Global Environmental Technologies, New Mexico Engineering Research Institute (NMERI)
DOE/CE/23810-42H	Methods development for measuring and classifying flammability/combustibility of refrigerants, Task 2: Test plan		
DOE/CE/23810-45	Accelerated screening methods for predicting lubricant performance in refrigerant compressors	C. Cusano H. Yoon C. Poppe	Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign
DOE/CE/23810-46	Measurement of viscosity, density, and gas solubility of refrigerant blends in selected synthetic lubricants	R. C. Cavestri	Imagination Resources, Inc.
DOE/CE/23810-47	Documentation of newly developed methods to assess material compatibility in refrigeration and air-conditioning applicaitons	M. Hawley	Air-Conditioning and Refrigeration Technology Institute
DOE/CE/23810-50	Methods development for measuring and classifying flammability/combustibility of refrigerants, Task 3: Laboratory Test Results	E. W. Heinonen R. E. Tapscott F. R. Crawford	The Center for Global Environmental Technologies, New Mexico Engineering Research Institute (NMERI)
DOE/CE/23810-54	Sealed tube comparisons of the compatibility of desiccants with refrigerants and lubricants	J. E. Field	Spauschus Associates, Inc.
DOE/CE/23810-55	Compatibility of manufacturing process fluids with R-134a and polyolester lubricant	R. C. Cavestri D. L. Schooley	Imagination Resources, Inc.
DOE/CE/23810-58	Lean flammability limit as a fundamental refrigerant property, Phase I	C. Womeldorf M. King W. Grosshandler	Building and Fire Research Laboratory, NIST
DOE/CE/23810-63	Compatibility of refrigerants and lubricants with motor materials under retrofit conditions	R. G. Doerr T. D. Waite	The Trane Company
	Volume I: Final report		
	Volume II: Data tables, high pressure refrigerants		
	Volume III: Data tables, low pressure refrigerants		
DOE/CE/23810-67	Volume IV: Pictures	E. F. Keuper F. B. Hamm P. R. Glamm	The Trane Company
	Evaluation of HFC-245ca for commercial use in low pressure chillers		
	Volume I: Final report		
DOE/CE/23810-68	Volume II: Chiller test data	C. Womeldorf W. Grosshandler	Building and Fire Research Laboratory, NIST
	Lean flammability limit as a fundamental refrigerant property, Phase II		
DOE/CE/23810-71	Study of lubricant circulation in HVAC systems	F. R. Biancardi H. H. Michels T. H. Sienel D. R. Pandy	United Technologies Research Center
	Volume I: Description of technical effort and results		
	Volume II: Compilation of program test data		

DOE MCLR Report Number	Title	Author(s)	Company
DOE/CE/23810-73	Investigation of flushing and clean-out methods for refrigeration equipment to ensure system compatibility	J. J. Byrne M. Shows M. W. Abel	Integral Sciences Inc.
DOE/CE/23810-74	Products of motor burnout	R. Hawley-Fedder D. Goerz C. Koester M. Wilson	Lawrence Livermore National Laboratory
DOE/CE/23810-75	Investigation into the fractionation of refrigerant blends	F. R. Biancardi H. H. Michels T. H. Sienel D. R. Pandey	United Technologies Research Center
DOE/CE/23810-76	Compatibility of lubricant additives with HFC refrigerants and synthetic lubricants, Part I	R. C. Cavestri	Imagination Resources, Inc.
DOE/CE/23810-80	Thermophysical properties of HCFC alternatives	W. M. Haynes	Physical and Chemical Properties Division, NIST
DOE/CE/23810-81	Impact of air and refrigerant maldistributions on the performance of finned-tube evaporators with R-22 and R-407C	J. Lee P. A. Domanski	Building Environment Division, NIST
DOE/CE/23810-82	Infrared analysis of refrigerant mixtures	T. F. Morse	Hope Technologies, Corp.
DOE/CE/23810-85	Methods development for organic contaminant determination in fluorocarbon refrigerant azeotropes and blends	J. J. Byrne M. W. Abel A. M. Gbur	Integral Sciences Inc.
DOE/CE/23810-87	Refrigerant flammability testing in large volume vessels, Flammability criterion determination for ASTM E681	R. G. Richard	Honeywell (formerly AlliedSignal)
DOE/CE/23810-88	Foaming characteristics of refrigerant / lubricants mixtures	D. Y. Goswami D. O. Shah C. K. Jotshi S. S. Bhagwat M. Leung A. S. Gregory S. Lu	Solar Energy & Energy Conversion Laboratory and The Center for Surface Science & Engineering
DOE/CE/23810-92	Risk assessment of HFC-32 and HFC-32/134a (30/70 wt.%) in split system residential heat pumps	W. Goetzler L. Bendixen P. Bartholomew	Arthur D. Little, Inc.
DOE/CE/23810-94	Accelerated test methods for predicting the life of motor materials exposed to refrigerant-lubricant mixtures	P. F. Ellis II A. F. Ferguson	Mechanical and Materials Engineering Radian International LLC
DOE/CE/23810-95	Effects of temperature on desiccant catalysis of refrigerant and lubricant decompositions	N. D. T. Rohatgi	Spauschus Associates, Inc.
DOE/CE/23810-97	Development of the REFPROP database and transport properties of refrigerants	M. O. McLinden	Physical and Chemical Properties Division, NIST

