

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Manufacturer of **genetron**[®] Super-Dry Refrigerants

Genetron 11—Orange Label—Trichloromonofluoromethane. For industrial and commercial refrigeration and air conditioning systems using single or multi-stage centrifugal compressors. Can also be used for either direct or indirect expansion-type systems.

Genetron 12—White Label—Dichlorodifluoromethane; and genetron 22—Green Label—Monochlorodifluoromethane. Used in virtually all types of refrigeration and air conditioning equipment, large and small, household and industrial, direct and indirect expansion systems.

Typical units in which "Genetron" 12 and 22 are used: refrigerators, freezers, frozen food lockers, window air conditioners, home or office console units, large custom-built units for commercial comfort or industrial processes, large store units, mobile units for transportation equipment, large home units for addition to present hot air heating systems.

Genetron 113—Purple Label—Trichlorotrifluoroethane. Used in 50-ton and larger centrifugal compressors, primarily for large comfort cooling systems, brine cooling systems, and other commercial and industrial air conditioning and refrigeration systems.

Genetron 114A—Blue Label—Dichlorotetrafluoroethane. Used in centrifugal and rotary compressors for commercial, industrial and household refrigeration.

QUICK FACTS on Genetron Super-Dry Refrigerants:

Guaranteed exceptionally low moisture content

Non-corrosive to standard equipment materials

Non-toxic, non-flammable, stable, safe

Critical and freezing points well outside range of operating uses

Solvent action on oil helps prevent solidification or congealing of lubricant

Freely interchangeable and may be mixed in any proportions with comparable fluorinated hydrocarbons meeting the same strict refrigerant specifications

Aid in lubrication of equipment; generally miscible with oil

Available everywhere, from refrigeration wholesalers throughout the country



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SELECTED PHYSICAL DATA

Selected Physical Data (Performance based on 5°F evaporator temperature and 86°F condenser temperature)	genetron 11	genetron 12	genetron 22	genetron 113	genetron 114A
Chemical Formula	CCl ₃ F	CCl ₂ F ₂	CHClF ₂	C ₂ Cl ₃ F ₃	C ₂ Cl ₂ F ₄
Molecular Weight	137.4	120.9	86.5	187.4	170.9
Boiling Pt. (°F) at 1 Atm. Pressure	74.7	-21.6	-41.4	117.6	37.6
Evaporator Pressure at 5°F (psig)	24.0*	11.8	28.3	27.9*	15.6*
Condensing Pressure at 86°F (psig)	3.6	93.3	159.8	13.9*	22.7
Freezing Point (°F) at 1 Atm. Pressure	-168	-252	-256	-31	-76
Critical Temperature (°F)	388	234	205	417	294
Critical Pressure (psi absolute)	635	597	716	495	478
Compressor Discharge Temperature (°F)	112	101	131	86	88
Compression Ratio (86°F/5°F)	6.24	4.08	4.06	8.02	5.33
Specific Volume of Saturated Vapor at 5°F (cu ft/lb)	12.27	1.46	1.25	27.04	4.04
Latent Heat of Vaporization at 5°F (Btu/lb)	84.0	68.2	93.6	70.6	60.2
Net Refrig. Effect of Liquid—86°F/5°F (Btu/lb)	67.5	50.0	69.3	53.7	43.0
Specific Heat of Liquid at 86°F (Btu/lb°F)	0.21	0.24	0.34	0.22	0.23
Specific Heat of Vapor at Constant Pressure of 1 Atm. & 86°F (Btu/lb°F)	0.13	0.15	0.15	0.15	0.16
Specific Heat Ratio at 86°F & 1 Atm. (k = Cp/Cv)	1.14	1.14	1.13	1.09	1.01
Coefficient of Performance	5.09	4.70	4.66	4.92	4.60
Horsepower/Ton Refrigeration	0.927	1.002	1.011	0.960	1.025
Refrigerant Circulated/Ton Refrig. (lbs/min.)	2.96	4.00	2.89	3.73	4.65
Liquid Circulated/Ton Refrig. (cu in/min.)	56.0	85.6	68.0	66.5	88.7
Compressor Displacement/Ton Refrig. (cfm)	36.32	5.83	3.60	100.76	18.78
Toxicity (Underwriters' Laboratories Group No.)	5A	6	5A	4-5	6
Flammability & Explosivity	None	None	None	None	None

* Inches of mercury vacuum.