

# Cl-F (Chlorine-Fluorine)

H. Okamoto

The Cl-F phase diagram was unknown in [Massalski2]. Figure 1 shows the Cl-F phase diagram reported by [1972Suk].

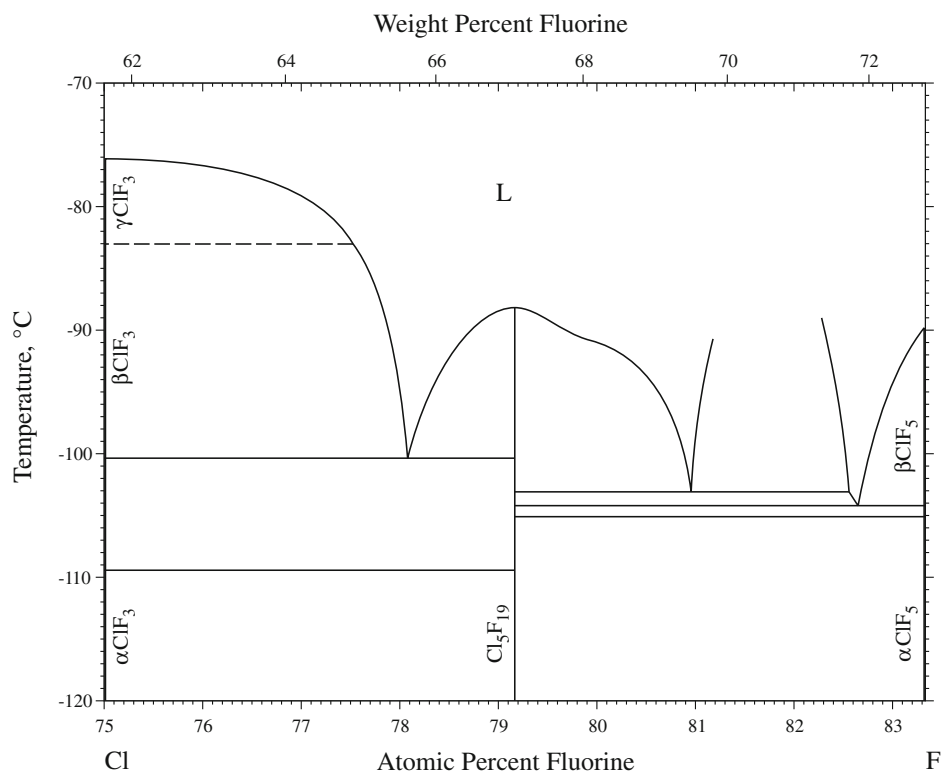
The crystal structures of  $\beta\text{ClF}_3$  and  $\alpha\text{ClF}_3$  were determined by [1989Ant] and [1953Bur], respectively, as shown in Table 1. No information is available for other phases.

## References

**1953Bur:** R.D. Burbank and F.N. Bensey, The Structures of the Interhalogen Compounds. I. Chlorine Trifluoride at  $-120^\circ\text{C}$ , *J. Chem. Phys.*, 1953, **21**, p 602-608

**Table 1** Cl-F crystal structure data

Phase	Composition, at.% F	Pearson symbol	Space group	Strukturbericht designation	Prototype
$\gamma\text{ClF}_3$	75	...	...	...	...
$\beta\text{ClF}_3$	75	<i>mP32</i>	<i>P12<sub>1</sub>/c1</i>	...	...
$\alpha\text{ClF}_3$	75	<i>oP16</i>	<i>Pnma</i>	...	...
$\text{Cl}_3\text{F}_{19}$	79.2	...	...	...	...
$\beta\text{ClF}_5$	83.3	...	...	...	...
$\alpha\text{ClF}_5$	83.3	...	...	...	...



**Fig. 1** Cl-F phase diagram

**1972Suk:** V.F. Sukhoverkhov and V.S. Barkman, An Investigation of Liquid Solid Phase Equilibrium in the  $\text{ClF}_5\text{-ClF}_3$  System, *Dokl. Akad. Nauk SSSR*, 1972, **207**, p 117-120, in Russian

**1989Ant:** M.Y. Antipin, A.M. Ellern, V.F. Sukhoverkhov, and Y.T. Struchkov, The Molecular and Crystal Structure of Chlorine Trifluoride  $\text{ClF}_3$  at  $-100^\circ\text{C}$ , *Russ. J. Inorg. Chem.*, 1989, **34**, p 459-461