

Structure Data of Free Polyatomic Molecules

| | | | |
|------------------|-------------------------|---|--|
| 152 ED | Cl₃Lu | Lutetium trichloride Lutetium(III) chloride | D_{3h} LuCl ₃ |
|------------------|-------------------------|---|--|

| | | | |
|-------|----------------|------------|----------------|
| r_g | \AA^a | θ_g | deg^a |
| Lu–Cl | 2.403(5) | Cl–Lu–Cl | 117.9(13) |

The molecule was found to exist as a mixture of monomeric (91.6(12) mol%) and dimeric forms. The dynamic model taking into account anharmonicity of out-of-plane bending vibration was used in the reanalysis [1] of the experimental data. Conclusion about planarity of the equilibrium structure supersedes previous reports that suggested a pyramidal structure [2,3].

The nozzle temperature was 1070(10) K.

^a) 2.5 times the estimated standard error including a systematic error.

Giricheva, N.I., Girichev, G.V., Krasnov, A.V., Krasnova, O.G.: Zh. Strukt. Khim. **41** No.3 (2000) 480; J. Struct. Chem. (Engl. Transl.) **41** (2000) 388.

[1] Giricheva, N.I., Zakharov, A.V., Shlykov, S.A., Girichev, G.V.: J. Chem. Soc., Dalton Trans. (2000) 3401.

[2] Zasorin, E.Z.: Zh. Fiz. Khim. **62** (1988) 883; Russ. J. Phys. Chem. (Engl. Transl.) **62** (1988) 441.

[3] Giricheva, N.I., Zasorin, E.Z., Girichev, G.V., Krasnov, K.S., Spiridonov, V.P.: Zh. Strukt. Khim. **17** No.5 (1976) 797; J. Struct. Chem. (Engl. Transl.) **17** (1976) 686.

Replaces [II/25A\(2, 368\)](#)