SUPPLEMENTARY DATA, BAASNER ET AL. AM-14-809

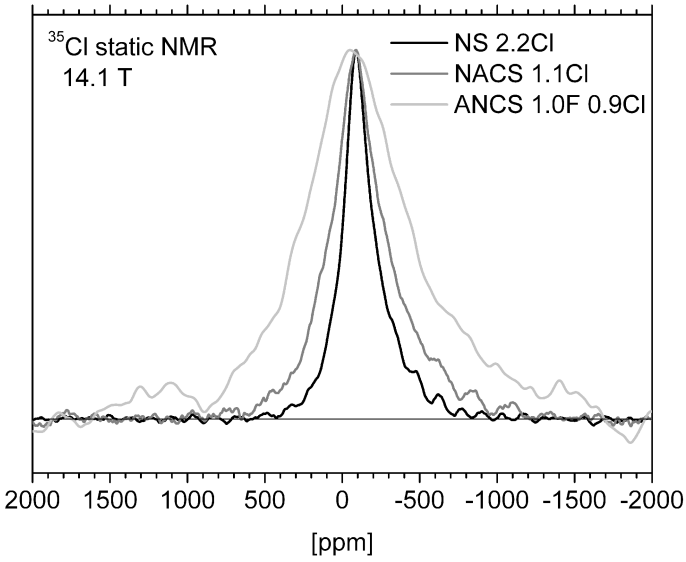

Figure A. Static ^{35}Cl NMR spectra of the sodium silicate glass NS 2.2Cl, the peralkaline glass NACS 1.1Cl and the peraluminous glass ANCS 1.0F 0.9Cl at 14.1 T. The peak maxima are at -90 ppm for the sodium silicate and the peralkaline glass and -50 ppm for the peraluminous glass. The spectra are normalized to the same peak height.

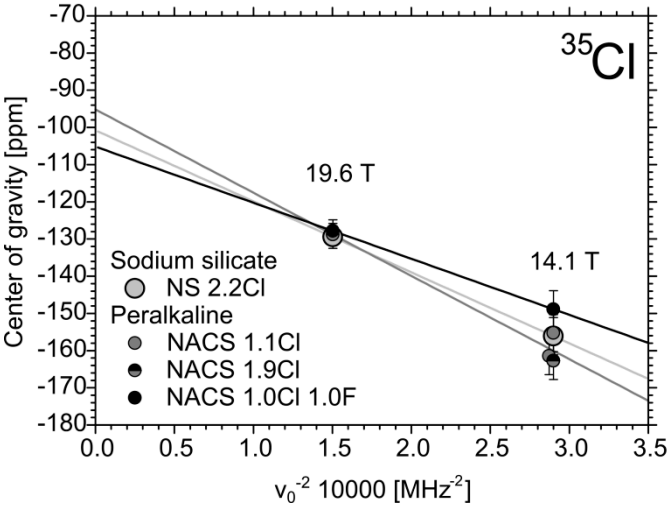

Figure B. Center of gravity of ^{35}Cl MAS NMR central bands of the Cl-bearing peralkaline and sodium silicate glasses as a function of inverse squared Larmor frequency ν^{-2}. The ordinate of linear regressions gives the isotropic chemical shift δ_{iso} and the quadrupole coupling C_q constant was calculated from the slope (see Table 3). The numbers on top of the data are the magnetic fields in Tesla. One linear equation was fitted to the combined data of NACS 1.1Cl at 14.1 T, 19.6 T and NACS 1.9Cl at 14.1 T.

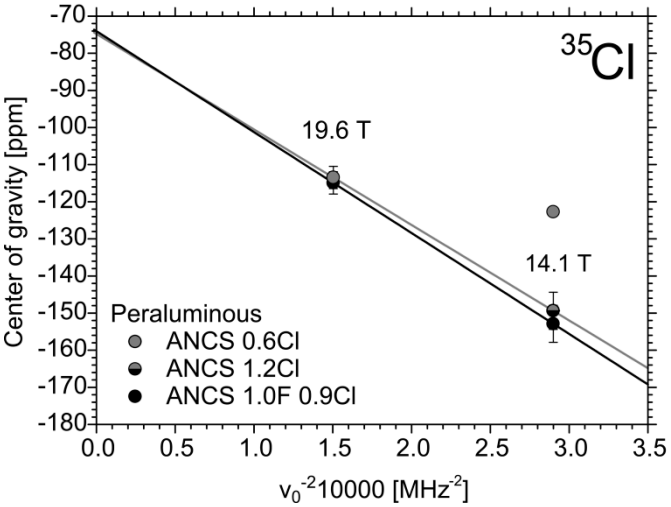

Figure C. Center of gravity of ^{35}Cl MAS NMR central bands of the Cl-bearing peralkaline and sodium silicate glasses as a function of inverse squared Larmor frequency ν^{-2}. The ordinate of the linear regressions gives the isotropic chemical shift δ_{iso} and the quadrupole coupling C_q constant was calculated from the slope (see Table 3). The numbers on top of the data are the magnetic fields in Tesla. The center of gravity of ANCS 0.6Cl at 14.1 T was not used for further evaluation as the signal to noise ratio of the spectrum was too low and its usage in evaluation delivered an unusual low C_q ~ 1.5 MHz, which is not consistent with the general quadrupole peak shape in the spectra in this study and previous studies (e.g. Sandland et al., 2004). Instead a linear equation was fitted to the center of gravity of ANCS 1.2Cl at 14.1 T and the center of gravity of ANCS 0.6Cl at 19.6 T.

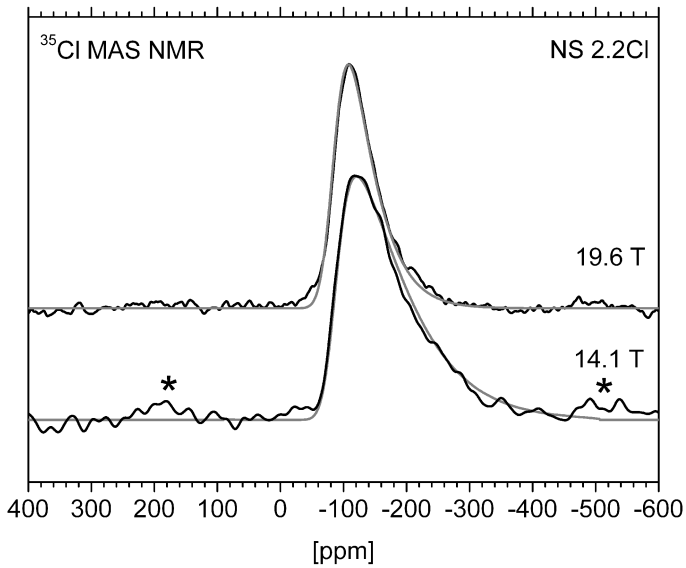

Figure D. ^{35}Cl MAS NMR spectra of the sodium silicate glass NS 2.2Cl at 14.1 T and 19.6 T (black lines) fitted with the program Quadfit (grey lines). The fit is $\overline{C_q}$ = 3.5 MHz, $\Delta\overline{C_q}$ = 2.5 MHz, $\overline{\eta}$ = 0.5, $\Delta\overline{\eta}$ = 0.3. Spinning sidebands are marked with an asterisk. The spectra are normalized to the same peak height.

Table A. Expected MAS relative intensities after Massiot et al. (1990) for a range of quadrupole coupling constants C_q and an asymmetry parameter η = 0.8 for different magnetic fields (values in T) and spinning speeds (values in kHz).

C_q [MHz]	Intensity 14.1 T 20 kHz	Intensity 19.6 T 30 kHz
2.6	0.75	0.94
3.5	0.38	0.80
4.1	0.19	0.65
4.3	0.16	0.58