temperature range than the corresponding elastic constants listed in Table 1.

The most affected shear resistance in NNA is $c''=(c_{11}-c_{12})/2$. It belongs to the shear wave propagating in [110] with displacement vector parallel to [$\bar{1}$10]. As with KCN, this constant can be described by the simple formula $c''=a\log T/T_0$ with $a=0{\cdot}05975\,.\,10^{11}$ dyn cm^{-2} and $T_0=156{\cdot}22°$K; T is also in °K. This approximation represents the measured values in the range $-34°$C to about 100°C with a deviation of less than 1%. For T'' one obtains $T''=1/T\log T/T_0$, which shows stronger deviations from the experimental values only above 100°C.

These calculated values are also listed in Tables 1 and 2. At higher temperatures the bond-weakening contributions, which are mainly due to thermal expansion, govern the thermoelastic behaviour more and more.

Approaching the transition temperature from higher temperatures the constant c'' decreases to about $0{\cdot}0254\,.\,10^{11}$ dyn cm^{-2}. This low value can be compared with the corresponding constant for KCN, c_{44}, which reaches $0{\cdot}01926\,.\,10^{11}$ dyn cm^{-2} in the vicinity of the transition temperature.

To a first approximation one may relate these values to the thermal induction of critical shear strains leading to a breakdown of the high temperature phase. Assuming nearly equal critical shear strains for both NNA and KCN, $c''(\mathrm{NNA})/T_t(\mathrm{NNA})$ and $c_{44}(\mathrm{KCN})/T_t(\mathrm{KCN})$, where T_t is the absolute transition temperature, will represent comparable critical values for the stability of the high-temperature phase. One obtains $c''(\mathrm{NNA})/T_t(\mathrm{NNA})=0{\cdot}0254/238{\cdot}9\approx 1{\cdot}06\,.\,10^{-4}$dyn cm^{-2}/°C and $c_{44}(\mathrm{KCN})/T_t(\mathrm{KCN})=0{\cdot}01926/167{\cdot}6\approx 1{\cdot}15\,.\,10^{-4}$ dyn cm^{-2}/°C.

The small difference in these values and the other common properties of KCN and NNA lead to the conclusion that the same kind of thermally activated interaction is responsible for the stability of the high-temperature phases and the anomalous thermoelastic behaviour. In KCN the essential part of this anomaly should be assigned to the librational motions and orientational jumping processes of the CN dipoles and the interaction between the adjacent dipoles. As was suggested by Kraceck, Hendricks & Posnjak (1931), the NO_3 ions in NNA must rotate at room temperature in order to comply with the X-ray data. At present one cannot decide whether or not the librational and orientational motions of the NO_3 ions alone are responsible for the effects observed in NNA. A contribution from similar motions of the NH_3 groups should be also discussed. Until now a satisfying model giving a quantitative interpretation of the elastic behaviour could not be established, but there can be no doubt that in KCN and NNA a special type of interaction is revealed in an exceptionally pure form. One can assume that in many other materials such interactions occur, sometimes strongly screened by the usual contributions which weaken the elastic bonds with increasing temperatures.

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References

HAUSSÜHL, S. (1963). *Phys. Stat. Sol.* **3**, 1072–1076.
HAUSSÜHL, S. (1973). *Sol. Stat. Commun.* **13**, 147–151.
JENSEN, A. T. & BEEVERS, C. A. (1938). *Trans. Faraday Soc.* **34**, 1478–1482.
KRACECK, F. C., HENDRICKS, S. B. & POSNJAK, E. (1931). *Nature, Lond.* **128**, 410.
LONG, E. A. & TOETTCHER, F. C. (1940). *J. Chem. Phys.* **8**, 504.
THOMAS, D. G., STAVELEY, L. A. K. & CULLIS, A. F. (1952). *J. Chem. Soc.* pp. 1727–1735.

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Multiple scattering and dynamical effects in diffuse electron scattering: errata.

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Corrections are given to *Acta Cryst.* (1973). A**29**, 663–672.

Printing errors have been found in the article by Høier (1973). The corrections are given below.

The integrals in equation (9), $\int \exp(-\mu^j z)P_1(z)\mathrm{d}z$ and $\int \exp(-\mu^j z)P_n(z)\mathrm{d}z$, should read respectively $\int \exp(\mu^j z)P_1(z)\mathrm{d}z$ and $\int \exp(\mu^j z)P_n(z)\mathrm{d}z$.

The sentence on page 666, second column, first line '– – – by a power expansion in $\Delta\mu^j t$:' should be replaced by '– – – by a power expansion in $\Delta\mu^j t$; including the prefactor $\exp(-\mu^j t)$ we get:'

Equation (11) $A_n=W_n(z)$ should read $A_n=W_n(t)$.

The function $g(z)=\exp(-\mu z)P_n(z)$ on page 667, first column, line 5 should read $g(z)=\exp(\mu z)P_n(z)$. A corresponding change in $g(z)$ should be introduced in the caption of Fig. 2.

Reference

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