ERRATA

Correlation of impact strength and rubber phase volume *raction in impact polystyrene*', *Polymer* 1980, **21**, pages 234–1235
:. Sacher

'igure 1 on page 1234 and *Figure 2* on page 1235 should ›e transposed. We apologise for this error.

ERRATA

The orientation hardening of PVC' *Polymer 1978*, **19**, 681, *'igure 5*
ι. Goss and R. N. Haward

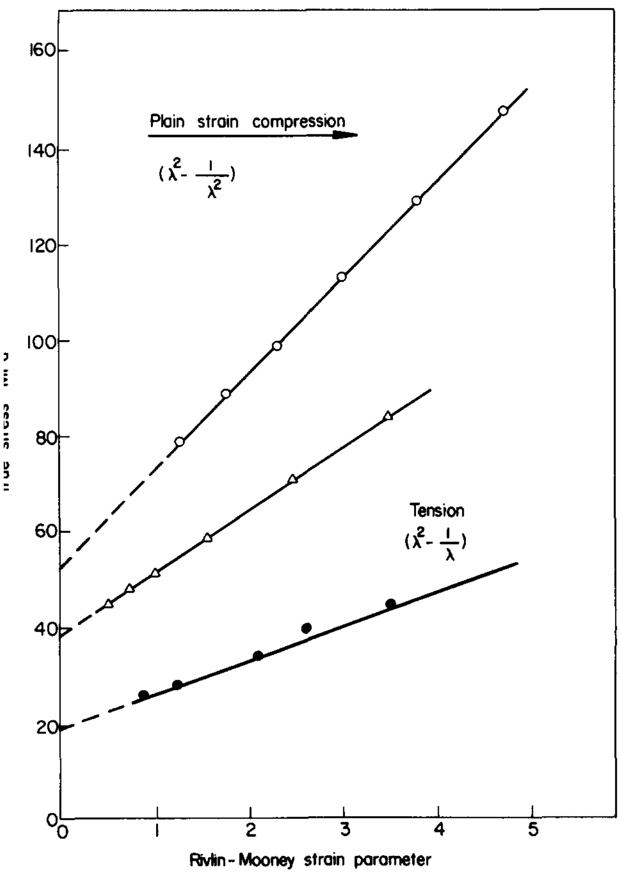
n presenting the relation between true stress and true) train in plane-strain compression (*Figure 5* of the above aper) we plotted the true stress against the strain arameter $\lambda - 1/\lambda^3$, where λ is the compression ratio. Iowever, the equation given for the true stress (force per nit strained area), namely,

$$S = 2(K_{|} + K_{||})(\lambda - 1/\lambda^3) \quad (1)$$

; incorrect, and is in fact the force per unit unstrained area 'engineering" stress). The true stress is:

$$S = 2(K_{|} + K_{||})(\lambda^2 - 1/\lambda^2) \quad (2)$$

'he error arose from the presumption that because the urface area in the plane–strain compression test is onstant it was unnecessary to distinguish between the true stress and the engineering stress (p. 678 of original paper). This, however, is erroneous, because the *volume* of material under stress decreases, hence the force cannot be obtained by differentiation of the work *W per unit volume* with respect to λ, as in the case of simple extension.



'igure 5 Use of rubber elasticity relations to describe the strain ıardening of PVC. True stress is plotted against the relevant ;train parameter. ○, ×, Rigid quenched PVC; ●, low plasticized ›VC

Plane–strain compression is formally equivalent to pure shear, for which a detailed analysis on the basis of the statistical theory ($K_{||} = 0$) has been given[1]. The resultant true stress in the principal direction of strain is found to be:

$$S = 2K_{|}(\lambda^2 - 1/\lambda^2) \quad (3)$$

An identical treatment using the Mooney form of strain–energy function leads directly to the result (2).

The appropriate strain parameter corresponding to either the statistical theory or to the Mooney equation should therefore be $\lambda^2 - 1/\lambda^2$ rather than $1 - 1/\lambda^3$.

The accompanying revised *Figure 5* which includes the unchanged lines for tension shows the results obtained on introducing this modification. They show an improved representation of the experimental results in that the two intercepts on the ordinate are now 52.5 for a plane–strain compression and 37.8 for tension. The resulting ratio of 1.39 agrees (as it should) with the value of 1.37 given elsewhere in the paper.

The net effect of this amendment is thus to strengthen the arguments in favour of using functions derived from the theory of rubber elasticity to describe the strain hardening process in plastics. It should, however, be noted that the slopes of the two lines for quenched PVC are not the same.

We are indebted to Prof. L. R. G. Treloar for calling our attention to this error.

References

1 'The Physics of Rubber Elasticity' 3rd Edn. L. R. G. Treloar p 85. Clarendon Press, Oxford, 1975

ERRATA

'*Rigid backbone polymers, XVII: Solution viscosity of polydisperse systems*' *Polymer* 1980, **21**, pages 1413–1422
Shaul M. Aharoni

Page 1413, line 6 in Abstract reads:

$$[\eta] = \frac{2\bar{x}}{45}\frac{1}{\ln 2\bar{x} - 1.84} + \frac{3}{\ln 2\bar{x} - 0.61} + \left(\frac{14}{15}\right)$$

It should read:

$$[\eta] = \frac{2\bar{x}}{45}\left(\frac{1}{\ln 2\bar{x} - 1.84} + \frac{3}{\ln 2\bar{x} - 0.61}\right) + \frac{14}{15}$$

Page 1413, line 11 in Abstract reads:

$$\eta^0 = \eta_{mat} 1 + \frac{(5\lambda + 2)}{2(\lambda + 1)} v_{inc}$$

It should read:

$$\eta^0 = \eta_{mat}\left(1 + \frac{(5\lambda + 2)}{2(\lambda + 1)} v_{inc}\right)$$

We apologise for these errors.