

The effect of 2,3-dimethyl-7-oxabicyclo-(2,2,1) heptane-2,3-dicarboxylic anhydride on the vulcanization of natural rubber when used in conjunction with the standard dicyclo-pentamethylenethiuram monosulfide process

On April 22, 1961, the entire scientific world was astounded to learn that Dr. Phil Trayte of the Royal Institute for Advanced Chemical Research succeeded in gravimetrically separating p-amino-benzenesulfonamide from its structural relative, p-aminotoluenesulfonamide, thus permitting the precipitation of 2,3-dimethyl-7-oxabicyclo-(2,2,1) heptane-2,3-dicarboxylic anhydride from the solution of 1,2,3-trihydroxypropyl alcohol. The successful separation of "2,3-hydride," as it is affectionately called by Dr. Trayte, has permitted him to develop a new, highly resilient form of rubber with a coefficient of static restitution (zinc sulfate against diamond = 1.00000) of  $0.99998 \pm 0.00001$  while still retaining the property of being 85.7143% transparent to the mean hydrogen gamma wavelength!

The new rubber is particularly adaptable to toroidal configurations as are required for the stage three separators at the Los Alamos linear accelerator, although original calculations seemed to indicate that the  $109^{\circ}26'$  covalent bond angles joining 2,3-hydride's seventeenth carbon of the primary aliphatic chain to the eighth aromatic sulfone would necessarily have to be stretched in the toroid shape, thus shortening the useful life by *ae<sup>bt</sup>* depending, of course, on the types of nucleons being accelerated at the time.

Other uses for this amazing material can only be speculated at this time, but the Royal Academy of Sciences made the following statement concerning the new development in their May Journal: "We of the Academy have the utmost confidence in the future of Dr. Phil Trayte's discovery and know that all the honours worthy of Britain will be bestowed upon our noble son." But Dr. Trayte, in the true spirit of a dedicated scientist, said that he preferred the seclusion of his laboratory to a state ceremony in his behalf that had been planned for May 5, in Windsor Gardens. God bless him.

Princeton, New Jersey  
May 22, 1961