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CUSTOM RESEARCH LABORATORIES

CHEMICAL INVESTIGATIONS AND LIAISON WORK
SYNTHESIS FORMULATION AND PRODUCTION PILOTING
CONSULTANCY AND LEGAL SERVICES

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PERFORMANCE PROPERTIES OF ULTRASEAL

INTRODUCTION

Ultraseal is a tire sealant composition which can be squirted into an uninflated tire so that any normal puncture or air leakage which is present or which occurs later, is sealed instantly.

COMPOSITION

Ultraseal consists of a balanced blend of fibers suspended in a water based adhesive.

MODE OF OPERATIONS

During the revolving of the tire, the material spreads around the inside of the tire. When a puncture occurs, the fibers clog the opening and the adhesive dries to a clot which seals the hole permanently.

SEALING

Ultraseal will not flow through a 1/4 inch wire mesh screen. A 650 - 14 tire was injected with one pint of Ultraseal and inflated to 30 p.s.i. It was revolved several times and pierced repeatedly with a 6" nail. On each puncture, a few drops of liquid squirted out and then stopped. The performance was repeated on a car which was being driven slowly so as to test the effect of the flexing at the road surface, with similar results.

SPREADING

After 2000 miles, a tire was removed and inspected inside. The material was still liquid and was spread haphazardly over the whole interior surface including the rims. A competitor's product showed a separation of fibers on the walls and a clear pool of water. Ultraseal did not show this separation after 2000 miles.

PLUGGING

After 2000 miles, several plugs were removed form the holes in the tire. They consisted of hard clots of organic matter, reinforced with road dirt on the outside. The inside was soft, wet and flexible, maintaining its conformity to flexing of the tire.

WHEEL BALANCE

Several cars were driven at speeds of up to 80 mph with Ultraseal in all tires. No imbalance was noted. This is consistent with the observation that Ultraseal spreads around the inside of the tire.

COOLING

Since water is an excellent heat transfer agent, it is to be expected that Ultraseal will have value in countering overheating and reducing hot - spots.

DURABILITY

Ultraseal shows little tendency to separate. It contains a mixture of preservatives to prevent microbial decomposition. It therefore cannot go sour or spoil in storage or inside the tire. It contains a blue dyestuff which further indicates that the material is in a stable condition. The material is slightly alkaline and the composition is such that it is chemically durable for at least a year and possibly many years.

REMOVABLE

Ultraseal retains its water soluble characteristics making it easy at any time to remove when changing tires for recapping.

REACTIONS

The ingredients in Ultraseal do not react with rubber and thus cannot cause softening, cracking or any other damage. Ingredients are included to protect the wheel rims against corrosion or pitting and to prevent the pickup of dissolved iron which could accelerate oxidation degradation of rubber. Ultraseal is not flammable or combustible or odorous.

SUMMARY

Ultraseal is a well-balanced composition which compares favorably in respect to durability, storage stability and harmlessness.

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