PLAINTIFF'S EXHIBIT
UC-377

Calidria ASBESTOS

UNION CARBIDE
THE DISCOVERY COMPANY

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A NEW APPROACH FOR SHOE SOLES AND HEELS

The recent petroleum crude crisis has had its effect on the rubber industry with the diminished availability of high styrene SBR resin (85/15 mol%). This material has been a standard additive to shoe sole and heel formulations for many years and its shortage has created a severe hardship for formulators. The formulation below has been developed by Union Carbide in cooperation with other raw material suppliers. It features the following:

- Calidria HPP Asbestos
- LDPE reinforcing resin
- An increased loading of precipitated silica
- Resorcinol/hexamethylenetetramine additions
- Necessary accelerator adjustments

By this means one can obtain an optimum cost/performance product without high styrene resin. The use of the HPP/LDPE system has been under investigation on an R & D basis for approximately two years in the USA. The synergistic effect of the system has been verified by many investigators.

SUGGESTED STARTING FORMULATION

Ingredients	pphr
SBR	100
Hi Sil 233 (ppt. silica)	50-60
Velsicol XL-30	5-7
Naphthenic Process Oil	5
*CARBOWAX 6000, Polyethylene Glycol	1.5-2.5
Resorcinol	2.5
Hexamethylenetetramine	1.6
Stearic Acid	1.0
Zinc Oxide	2-4
Sulfur	3.5
TMTDS	0.25
MBTS	1.5
DPG	0.6

ADDITIONS TO ABOVE TO INCREASE HARDNESS, FLEX-LIFE AND ABRASION RESISTANCE

*Low Density P.E., Polyethylene DNPA-3130	25-35 pphr
*Calidria HPP, High Purity Pelletized Asbestos	20-30 pphr

*Union Carbide Corporation

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