

T-4 T-1-270 Copy for BOD-Ann R/C

technology needed to make ultra-pure germanium. In fact, technology to do this is not new, but know-how associated with method is critical.....

.....Initially germanium is melted in quartz container lined with pure quartz smoke made by burning silane in pure oxygen. Resulting germanium ingot is placed in nitrogen/hydrogen gas atmosphere and thin molten zone is moved slowly through whole length of germanium ingot. Repeating this zone melting process leads to pure germanium that is remelted in synthetic quartz crucible. Small single crystal is immersed in molten germanium and pulled out to form larger single crystal.....

.....Several firms or university labs have talked to Berkeley scientists about duplicating process under their own roofs. So far only Hoboken Metallurgie of Belgium has offered commercial product, but it isn't as good as what is available from GE. Others are attempting to match GE purity though and they may be offering product before very long.....

.....This highly pure germanium is ideal for large volume radiation detectors that do not require cooling. Availability of ultra-pure germanium has also stimulated new kinds of semi-conductor physics and provided techniques in making novel electronic devices.

We hear that Exxon's new motor oil that should give you 4.5% better gasoline mileage contains soluble additive, comparable to organic detergent or what has been known in lubrication field as soluble Extreme Pressure additives. These materials consist of organic chain and active group, which often has been phosphorus in some past additives. Active group holds to metal while organic chain remains in oil. These friction modifiers ease movement of metal on metal. Exxon is applying for patent on its modifiers. Basic mode of operation would remain same as old EP additives, however.....

.....Exxon's new Uniflow motor oil will sell for premium price as others announced by Mobil and Atlantic Richfield. However, Exxon doesn't claim extended drain intervals or reduced oil consumption nor even reduced engine wear, just better mileage.

Cancer-causing potential of asbestos may be linked to particle size of this mineral.

That's finding of Ohio State Univ. scientist. If confirmed, optimum limits of safe particle size could be set, then size of particles might be controlled in milling process. This could save many products which now seem destined for extinction since they contain asbestos. Latest on this list is asbestos fireplace logs and spackling compounds containing asbestos. These two items are now listed as unsafe by Consumer Product Safety Commission. Real fear, however, is that wide and varied use of asbestos in insulation and fire-resistant products might be banned unless some way is found to use asbestos fiber in safe manner. Ohio State finding may be clue to that goal. Details: Ronald Hart, Dept. of Radiology, Ohio State Univ., Columbus, OH 43210.

While it's true that industrial firms generally have shifted their research spending toward defensive R&D (to improve existing products and processes as well as meet regulatory demands) there are still industry's and firms intent on new product development. One such firm--General Mills--shows its dependence on R&D in figures from its latest fiscal year, ending May 1977. R&D expenditures were \$29.9 million, up a whopping 16.3% from previous year. Why, you may ask. Well firms such as General Mills survive and grow on their ability to produce new products. To prove that, take look at General Mill's sales breakdown. It shows that 25% of its sales in latest fiscal year comes from new products introduced within past five years.....  
.....Point is, if you are in industry where new products are critical to maintain growth, you should be  bucking overall trend in R&D spending. That is, you should be spending majority of your R&D dollar on new product development. If not, product lines will mature and sales growth will be difficult to maintain.

**WATCH FOR.....Food & Drug Admin. ban on use of penicillin in food for poultry and swine.**

It is now used to promote growth and prevent disease in animals but FDA fears it can produce antibiotic-resistant organisms that may pose hazard to man.....

.....Biological systems to reduce wood to pulp and chemicals. Forest Products Lab (Madison, WI) has project aimed at using fungi to remove glue-like lignin from cellulose fibers in wood to save energy, reduce pollution, and provide new sources of chemicals and food. At least five other groups working on biological systems.....

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From "Inside R&D", Box 1304, Fort Lee, N.J. 07024, sent down from R.G.Labar's office.