

Secrets Revealed

This Thing Called Glass

Man has been making glass for at least 5,000 years, but he still is not sure what it is. The atomic structure of glass is known only in a general way, and scientists disagree over its details, the National Geographic Society says.

Research, however, is revealing more secrets of this curious substance, which technically is a supercooled liquid, not a solid. As chemists learn more of the nature of glass, they are able to exploit its full potential.

Consequently, glass is no longer a fragile material of limited utility. In recent years scientists have created an amazing array of tough, versatile "wonder glasses."

10 Inches Thick
A lead oxide cast in massive slabs 10 inches thick is nearly as heavy as steel. Used to shield radioactive isotopes, it remains clear even under heavy atomic radiation.

Photosensitive glass changes color or structure when exposed to ultraviolet light and developed by heat. A variety produces patterns soluble in acid, which are dissolved to produce precisely formed electronic components. In one instance 360,000 minute holes were etched in a two-inch square of glass.

Some heat resistant glasses can be baked cherry red and plunged into ice water without breaking.

Tempered glass has the strength of cast iron. It is made by heating the glass until it begins to soften, then quickly cooling the surface. The cool surface forms a rigid skin around the still-warm, expanding interior. When the interior glass cools, it shrinks and tries to pull the surface inward. The resultant interior tension and surface compression must be overcome before the glass can be broken.

Fiber glass, the toughest form of glass, is stronger than any other material of the same weight provided its surface is perfect. One experimental fiber forces up to almost a million pounds per square inch, but a damp finger rubbed over the surface may cut its strength nearly in half.

Fiber glass is used in more than 30,000 products, including electrical insulation, fabrics, building insulation, roofing shingles, window screens, helicopter rotor blades, boats hulls, automobile bodies, air filters, an filter papers. Recent tests show that glass fibers added to ice airport runways, which are common in polar regions, increase the strength of natural ice.

Though special glasses are increasingly important, conventional window and container glass accounts for nearly 75 per cent of the 8,000,000 tons of glass produced annually in the United States. Ordinary glass is made of silica in the form of sand fused at high temperatures with soda ash or limestone.

One large glass works, which has tested 65,000 glass formulas, develops new ones at the rate of 30 a day. Almost half the 102 elements are regularly used to make various glasses.

Glassmakers see a shining future for their product. They envision glass rocket ships, strong structural glass beams, and phosphorescent glass highways that glow softly at night.

"We've got a great substance to work with," says one glass engineer, "and it's made from the cheapest raw material in the world."

Teen-Age Bicycle Rider Killed Near Tabor City

A Tabor City elementary school student, returning home after a happy afternoon at a class party, became a traffic victim when his bicycle was hit by an auto on US 701, a mile south of the N. C. S. C. boundary, near Tabor, Thursday night.

Larry Keith Fowler, 13, was killed instantly. He was the son of Mr. and Mrs. Loman Fowler of Tabor City.

Horry County, S. C. Coroner Littlejohn Blanton of Conway said that the driver of the death car, Roger Floyd, 18, of near Goretown, on Loris, Route 4, had been placed under bond of \$1,000 pending an inquest.

According to Blanton, both the dead youth, riding his bike, and the auto, driven by Floyd, were moving northward, toward Tabor City at the time of the fatal accident. The fatality occurred shortly after 7 p. m., Thursday.

The victim was a member of the seventh-grade class at Tabor City Schools and had attended a party and weiner roast at the home of Mrs. Albert Goldfinch, at Howard, S. C. Mrs. Goldfinch and Mrs. Albert Schilds, of Tabor City, had reportedly entertained the class. The two are class-mothers of the Tabor City seventh-grade.

Following the party, young Fowler and a friend, Joe Scott of Tabor City, were returning home on their bikes.

Coroner Blanton said that Floyd told him he failed to see the bikes of Scott and Fowler until he was near them, that the two bicycles were traveling in the center of the highway and, as he approached, one went right the other left. The coroner said Floyd claims that the Fowler bike remained in his lane of traffic and he was unable to avoid hitting it from the rear.

tax to four per cent will not yield the amount of money needed—unless they go for a sales tax on a lot of items not taxed at the present time.

So, they are in a financial corner; and the only sure way to get rid of the burden which a long line of legislators from the past have dropped into their laps is to place a tax on food. This they will do in about two weeks.

Beginning To Show?
Sales of new cars in North

Carolina in April were down sharply as compared with April of 1960, reports the Motor Vehicles Dept.

In April of 1960 total new car sales were 10,837. This April, 8,065.

There was an even wider difference between truck sales for April of 1960 and the recent April. Last year for the month: 2,291. This April 1,752.

Now we are talking about good times in this State. But they do not look too good for

the automobile dealer. It may be that the recession we had thrown at us during the winter is at last beginning to show in vehicular trade.

A beach of cockleshells serves as the airport for the Scottish island of Barra in the Outer Hebrides. Airplanes land at low tide.

Because diamonds take on surrounding color, appraisers must examine them in natural light away from the sun.

Electronics Friend To Dairy

Electronics have a big part in putting milk on your table.

The use of high-speed computers has helped North Carolina State college develop the dairy records center of the Southeast. Housed in the basement of the college cafeteria, the machines process dairy production records from 10 states in the area.

Many a Tar Heel dairy farmer might have quit the dairy business without the help of the electronic brains. A machine can tell whether he's making money this month on his cows. And it can give him feeding and breeding tips to help him make more money.

Each month, individual records on more than 10,000 cows in the Southeast are sent to the center. The "brains" compile and analyze information supplied by the farmer on his cows. In a couple of minutes, they can tote up summaries that would take the farmer ten hours or more to make—even if he knew how to do it.

The summary is returned to the farmer, who uses it to adjust his herd management program. It helps him to get more milk per cow, at less cost. And it improves the efficiency of his dairy operation.

Machine processing of dairy records began to replace human calculating in January of 1958. State College began with an enrollment of 1,689 cows in 27 herds.

"In March of this year, we had 102,410 cows enrolled from 1,894 herds," says Marvin Senger, Extension dairy specialist at the college. "Enrollment of cows in the ten-state area in production sampling programs has jumped more than 25 per cent in the past two years, and it's quite likely that machine processing of re-

ords stimulated this increase."

In North Carolina, more dairy herd improvement association cows are getting on machine processing each year. There were 517 herds with 23,677 cows enrolled on April 1-71 per cent of the DHIA herds in the state.

"An average of 11 to 12 herds have been transferring to the new system each month," says Senger.

Eighteen of the 46 associations in the state are on the system 100 per cent, and several more are nearly 100 per cent.

At our present rate of transfer, all herds on hand-calculating will be using the central machine system by a year from now," says Senger.



Is the 1961 Legislature setting the stage for the election of a Republican Governor in 1964?

They won't talk about it for publication, but just a lot of good Democrats here, laboring over money items and redistricting believe deeply that the Democrats will have to fight harder than ever before a short three years from now to keep the State from a form of Republicanism it has not known since the turn of the century.

Jonas And Food
Most of the legislators—

though certainly not all of them have about come to the conclusion now that the only sure way of raising the money for Gov. Terry Sanford's educational Program is to put a tax on food.

Three solid months of conferring with revenue people have convinced them only the tax on food—plus a handful of other items now exempt—will fulfill the State's money needs during the next biennium.

They know that two per cent straight across the board will not do the job. Even raising the

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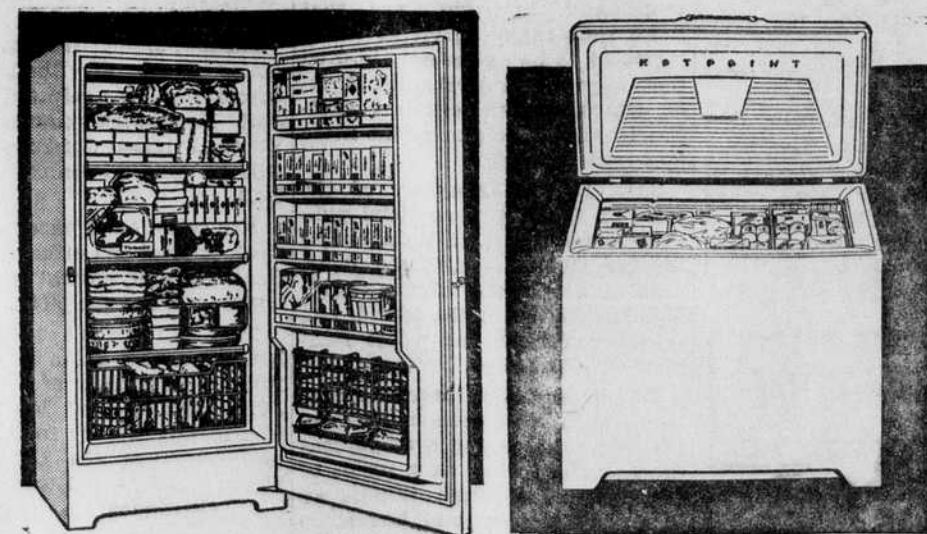
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