

The Knowledge Bank at The Ohio State University

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GLYCERINE MAY BE USED AGAINST MUSTARD GAS

Glycerine and glycerine-gelatin mixtures, including cellophane and other cellulose products have been found to be effective barriers from mustard gas for considerable time. These products would be protective not only to individuals, but also to food.

In the **Drug and Cosmetic Industry** (March 1942) a cream made of glycerine, a gum such as tragacanth, and an oil repellent solid starch was suggested as protection.

The addition of cellulose compounds to textiles is being considered for making them impregnable to the mustard gas.

... and we made a Sapphire!

YOU'RE LOOKING at a sapphire being made in the incandescent heat of a specially designed furnace... a synthetic sapphire... better than the natural gem. It takes hours to grow one of these sapphire boules.

What's so wonderful about it? Sapphire is necessary for the security of this country. Out of this jewel stone are made hard, long-wearing bearings for precision instruments. The various precision devices of a modern battleship require more than 4,000 jewels; about 100 more are needed in fire-control mechanisms. Modern pursuit planes and bombers require up to 100 sapphire bearings in their instruments.

In 1940, this country was completely dependent upon Europe for sapphire jewels. The call went out for American-made sapphire to meet this nation's needs.

Because we at Linde are experienced in the production of gases and in the accurate control of high temperature gas flames, we volunteered to try to make sapphire. After two years of experimental research, we learned how to produce the high-purity raw materials needed and also how to make sapphire from those materials. Today, we make more synthetic sapphire than this country ever imported from Europe... enough to meet all industrial and military needs. Thus America need never again be dependent upon an outside source.

Right now, we make colorless sapphire because colorless jewels make harder bearings. No sapphire is available for anything but war production. In the future we stand ready to make ruby and other gem stone materials for the jewelry trade... and for you.

This research development by The Linde Air Products Company is paralleled by other recent achievements of Electro Metallurgical Company, Carbide and Carbon Chemicals Corporation, and National Carbon Company, Inc.—all of which are Units of Union Carbide and Carbon Corporation.

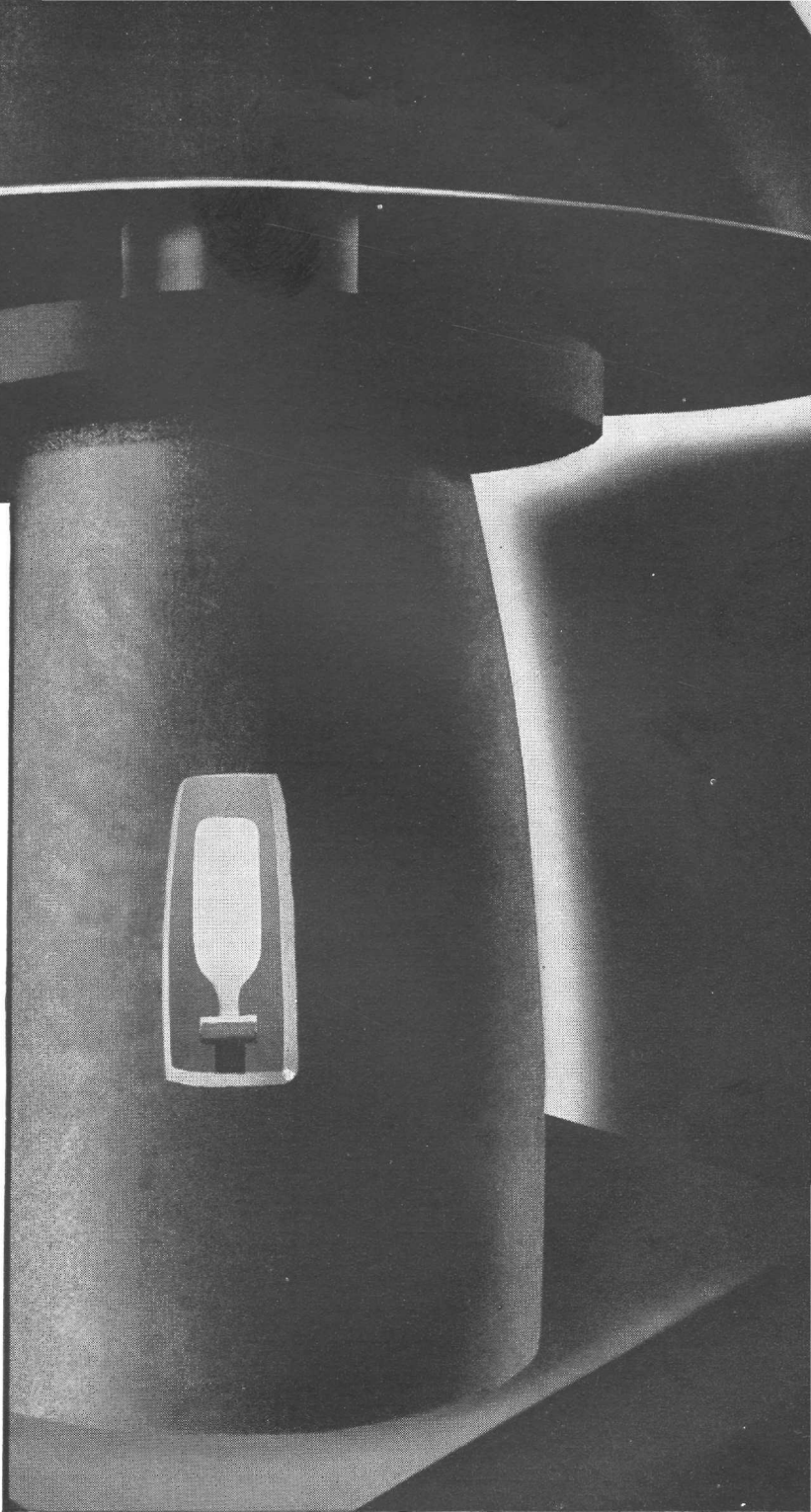
THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation



GENERAL OFFICES: NEW YORK, N. Y.

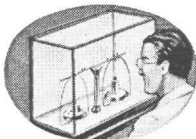
Offices in Principal Cities



HIS BEARINGS ARE RIGHT—Chronometers, compasses, and other navigational aids must be rugged as well as precise. Sapphire bearings can "take it."



FLYING JEWELS—Pilots' lives and the success of their missions depend upon accurate instruments. Sapphire bearings assure continued accuracy.



LABORATORY WARRIORS—Delicate balances, time instruments, and other important precision equipment of the research worker need sapphire jewels, too.



YOURS IN THE FUTURE—Flawless gems... such as rubies, sapphires, and spinel... made by this same Linde process... will be available for jewelry in the future.

BUY UNITED STATES WAR BONDS AND STAMPS