

TRITIUM Labelling Services

Although Nuclear-Chicago has the most extensive line of tritium-labelled compounds commercially available (139 at last count), it is impossible to meet every demand of the individual tracer worker. In recognition of these special needs, we offer three types of tritium labelling services for investigators who can supply the compound to be labelled.

TR-1: Labelling by Catalytic Exchange in Aqueous Media

Suitable only for organic compounds stable in aqueous solutions at temperatures up to 120°C in the presence of a platinum catalyst.

The material (not over 1 g) and the platinum catalyst (about 200 mg) are stirred with tritiated water or 70% acetic acid (3 ml) containing *not less than 100 curies* for 16-20 hours under reflux. The tritiated solvent and labile tritium are removed by treatment with water.

After removal of the catalyst, the product is supplied as a freeze-dried solid, as a liquid, or dissolved in a suitable solvent, however desired. In general, purity and specific activity are higher than from a Wilzbach irradiation, and complete purification is easier.

Standard labelling charge: \$390

Purification and analysis (minimum additional charge): \$560

TR-2: Irradiation with Tritium Gas—(Wilzbach method)

TR-3: Hydrogenation of Unsaturated Compounds with Tritium Gas—(reduction labelling)

(ASK FOR our Technical Data sheet describing all three services in detail. We will be glad to consult with you to arrive at the most appropriate procedure for any given compound.)

NUC: G-3-225



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quired to obtain a substantial amount of insurance with private companies. This covers most of the accidents which might occur. The government insurance in effect amounts to a \$60 million deductible policy. The utilities pay AEC a fee of \$30 per thousand kilowatts of thermal energy as a premium to obtain the additional coverage up to \$500 million.

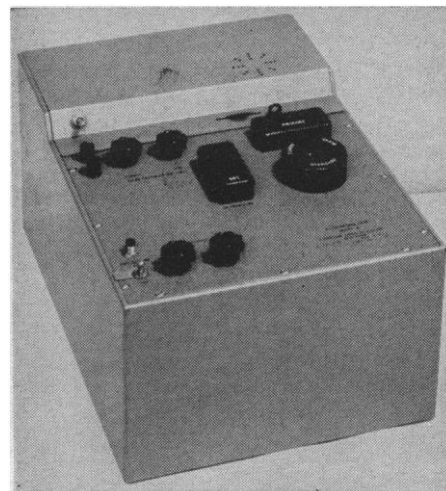
It is difficult to establish what the true competitive position of oil and nuclear energy would be in the absence of federal action. The government has set an artificially high price for natural uranium. In a free market its price might be half what it is at present. The 27½-percent depletion allowance for oil is worth about a billion dollars a year to the petroleum industry. If this allowance were removed, the competitive situation with respect to energy in California would be considerably changed.—P.H.A.

Activists and Nonactivists

The article "Divergent reactions to the threat of war" [*Science* 139, 88 (11 Jan. 1963)] raised a number of important issues, mainly in the realm of group perception. For instance, the restudy seemed to suggest that both groups had been attentive to those arguments and points of view presented publicly that were most closely in accord with their previous thinking. After intensive public propaganda by opponents of Medicare, as well as by its supporters, the OASIS group was more against it, and the People for Peace group were more in favor of it.

In their conclusion the authors express surprise at the "similarity between the two groups" and suggest that this may have been due to the "particular community studied." May I suggest another alternative, which evidently was not considered by the authors? It is significant that out of a community of 8000 people (3500 adults?) only 54 sought concrete community action of any kind during the Berlin crisis (unless there was other activity which the authors do not tell us about). Perhaps the two groups are relatively similar in a number of ways because they represent the activists in the community. They are probably the best-informed members of the community and those who tend to respond to emergency conditions with some kind of concrete ac-

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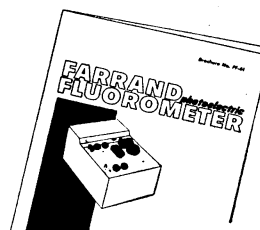
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tion. Despite fundamental differences between the two groups, the many overlapping areas of attitude and belief would seem to support this hypothesis.

In any case, it would be interesting to compare the beliefs, attitudes, and personalities of the members of these two groups with those of a sample of nonactivists in the same community, to see whether the differences between the joiners and the nonjoiners is any greater than the differences between the two groups of joiners.

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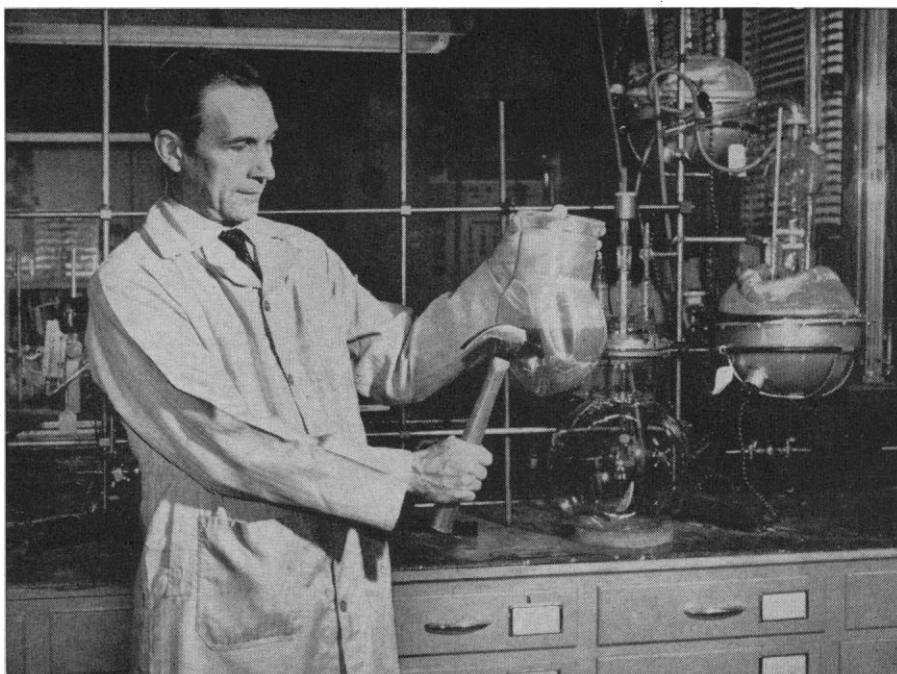
Ultrafiltration

Membrane Performance

Clark states (1) that the driving force for ultrafiltration is the chemical potential. This is a misleading statement. Any difference in chemical potential that arises across the membrane is a (hitherto unexplained) *result* of the pressure ultrafiltration process and not its *cause*. The driving force for ultrafiltration is the applied-pressure difference across the membrane. It is immaterial whether this pressure difference be expressed as such, or as, for instance, a chemical potential gradient, but in order not to confuse cause and effect, and in order to explain clearly the various phenomena inherent in pressure ultrafiltration, it is best to consistently view the external energy source, the applied-pressure difference, as the driving force for ultrafiltration.

A paradoxical phenomenon is this: The higher the pressure is, the more salt the cellophane membrane retains in an ultrafilter containing a solution of salt in water. Clark (1) has not explained this phenomenon. For its explanation one needs more facts than just the data from Ambard and Trautmann's Table 2 (2), given by Clark. A few more useful data can be found elsewhere in their book: Tables 4, 5, and 6 demonstrate that salts with bivalent anions and monovalent cations are more strongly retained than salts with monovalent anions and monovalent cations, while salts with bivalent cations and monovalent anions are hardly retained at all, as compared to salts with monovalent cations and anions.

When we relate these data to the



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