Ideas Exchange Column

I/EC's features bring in lots of fan mail. Readers want information, and they pass along ideas. Ideas Exchange Column is a careful screening of this correspondence. This is not a place for praise or criticism; it is a source of technical questions and their factual answers.

Color Removal from Azo Dye Wastes

DEAR DR. NEMEROW:

Your article on color removal was very interesting [I/EC **49,** No. 12, 77 A (1957)].

In our laboratory we find that zinc hydrosulfite and zinc formaldehyde sulfoxylate are equal to or are more effective than stannous chloride for reducing the color of methyl orange and methyl red solutions. Presumably corresponding sodium compounds are equally effective.

Do you have any information on these hydrosulfites that gives reason against their commercial use for cleaning up dyestuff wastes?

G. R. WAITKINS
Assistant Manager
Research Department
American Zinc, Lead and Smelting Co.
10334 Manchester Road, Saint Louis County, Kirkwood 22, Mo.

Dr. Nemerow's Answer:

We are aware of the great reducing capacity of the hydrosulfites. Our initial studies did not include any experiments with the hydrosulfites. I am planning to carry out further studies in color removal at my new location, Syracuse University, in the Civil Engineering Department.

Residual sulfur compounds remaining in the clarified dye waste may give rise to nuisance conditions when the potential drops sufficiently to create anserobiosis. This is the only obvious objection to the use of hydrosulfites. Reduced costs and improved efficiencies of color removal may overrule the previously mentioned objection.

Trace Oxygen Analyzers

Editor's Note: We have received many inquiries on this subject. Because of the great interest in this we are considering publication of the entire paper.

DEAR MR. WALL:

This article [I/EC **49,** 77 A (October 1957)] describes a cell measuring traces of oxygen. Is the sheet of lead serving as an anode porous and what is the exact expansion of the gas? Is the electrolyte solution absorbed on the filter, or if it is contained in the cell, what is the level?

F. BOUGAIN and L. FOULLETIER
Societe D'Electro-Chimie
D'Electro-Metallurgie Et Des
Acieries Electriques D'Ugine
Centre de Recherches de Lyon
Pierre-Benite Rhone

DEAR MR. WALL:

We would appreciate receiving a more detailed description of the trace oxygen analyzer and information on how it is used.

J. A. BIEHL
The Ohio Oil Co.
Refining Department
Findlay, Ohio

DEAR MR. WALL:

Our work requires the transfer of heat to a graphite ball reactor, in a closed system, by recirculating a stream of preheated helium through the reactor. As any oxygen present in the recycle helium or in the fresh feed stream reacts with the graphite balls and causes deterioration, the helium stream must be absolutely free of oxygen.

To accomplish the monitoring trace amounts of oxygen in a helium stream, it appears that the instrument developed by Consolidated Electrodynamics Corp., and described in this article, could be employed.

Could you please send us a reprint of the article together with any other information available on this instrument?

M. W. WILSON
Supervisor Chemist
U. S. Department of Interior
Bureau of Mines
Post Office Box 880
Morgantown, W. Va.

DEAR MR. WALL:

I'm particularly interested in any instrument or method that can be used to measure the oxygen content of a 12-lb. vapor pressure gasoline stream. Can you supply me any information pertaining to an oxygen analyzer?

JACK R. FRYAR
Process Treating Engineer
Phillips Petroleum Co.
Box 358
Phillips, Tex.

Mr. Wall's Answer:

Copies of the article upon which this column has been based have been exhausted. However, this article describing the cells and its use in considerable detail has just been published. More detailed information on this device can be obtained from:

"The Galvanic Cell Oxygen Analyzer," W. J. Baker, J. F. Combs, T. L. Zinn, A. W. Wotring, and R. F. Wall. Paper No. A-157-3-4, Proceedings of the National Instrument Society of America, 1957, National Conference on Instrumental Methods of Analysis, Chicago, Ill., *June 13–15, 1957.*

The sheet of lead comprising the anode is not porous. Ordinary commercial sheet lead was found to be satisfactory. The electrolyte solution is in the pool in the bottom of the cell into which the filter paper membrane dips. The filter is kept wet through capillary action.

Two companies now marketing Trace Oxygen Analyzers are:

Baker & Co., Inc.
207 Grant Ave.
East Newark, N. J.

Analytical Systems Co.
980 North Fair Oaks Ave.
Pasadena, Calif.

This analyzer would be suitable for 12-lb. vapor pressure gasoline stream, at least as far as being operable is concerned. The cell is also sensitive to back pressure on the vent line and some noise would be expected from the operation at a subatmospheric pressure. Stripping a liquid sample with oxygen-free nitrogen could be a satisfactory technique.